

1331

No. 3945

United States
Circuit Court of Appeals
For the Ninth Circuit.

Transcript of Record.

(IN TWO VOLUMES.)

DAVID G. LORRAINE,

Appellant,

vs.

FRANCIS M. TOWNSEND, MILON J. TRUMBLE and ALFRED J. GUTZLER, Doing Business Under the Firm Name of TRUMBLE GAS TRAP COMPANY,

Appellees.

VOLUME I.

(Pages 1 to 320, Inclusive.)

Upon Appeal from the United States District Court for
the Southern District of California,
Southern Division.

FILED

DEC 28 1922

F. D. MONOKTON,
CLERK

United States
Circuit Court of Appeals
For the Ninth Circuit.

Transcript of Record.
(IN TWO VOLUMES.)

DAVID G. LORRAINE,

Appellant,

vs.

FRANCIS M. TOWNSEND, MILON J. TRUMBLE and ALFRED J. GUTZLER, Doing Business Under the Firm Name of TRUMBLE GAS TRAP COMPANY,

Appellees.

VOLUME I.
(Pages 1 to 320, Inclusive.)

Upon Appeal from the United States District Court for
the Southern District of California,
Southern Division.



Digitized by the Internet Archive
in 2010 with funding from
Public.Resource.Org and Law.Gov

INDEX TO THE PRINTED TRANSCRIPT OF RECORD.

[Clerk's Note: When deemed likely to be of an important nature, errors or doubtful matters appearing in the original certified record are printed literally in italic; and, likewise, cancelled matter appearing in the original certified record is printed and cancelled herein accordingly. When possible, an omission from the text is indicated by printing in italic the two words between which the omission seems to occur.]

	Page
Answer to Bill of Complaint.....	10
Answer to Supplemental Bill of Complaint.....	42
Assignment of Errors	549
Bill of Complaint for Infringement of Letters Patent No. 1,269,134.....	3
Bond on Appeal	563
Certificate of Clerk U. S. District Court to Transcript of Record	575
Citation	1
Hearing	19
Interlocutory Decree	543
Minutes of Court—March 13, 1922—Hearing..	19
Minutes of Court—March 20, 1922—Hearing (Continued)	20
Minutes of Court—March 22, 1922—Hearing (Continued)	21
Minutes of Court—March 23, 1922—Hearing (Continued)	24
Minutes of Court—March 24, 1922—Hearing (Continued)	33
Minutes of Court—March 27, 1922—Hearing (Continued)	35

Index.	Page
Minutes of Court—March 28, 1922—Hearing (Continued)	39
Motion for Order Permitting Defendant to Amend Answer	17
Names and Addresses of Attorneys of Record.	1
Notice of Motion	16
Opinion	530
Order Allowing Appeal	561
Order Extending Time to and Including December 5, 1922, to File Record and Docket Cause	577
Petition for Appeal	548
Praeclipe for Transcript of Record on Appeal, and Exhibits	573
Reporter's Transcript of Testimony and Pro- ceedings.....	45
Stipulation Re Transcript of Record on Appeal and Exhibits	566
Supplemental Bill of Complaint.....	28
TESTIMONY ON BEHALF OF PLAINTIFFS:	
DAVIS, THOMAS T.	170
GUTZLER, A. J.	114
Cross-examination	118
HARRIS, O. W.	119
Recalled	156
Cross-examination	169
Recalled—Cross-examination	171
Recalled—In Rebuttal	515
Cross-examination	521

Index.	Page
TESTIMONY ON BEHALF OF PLAINTIFFS—Continued:	
HYRUP, HANS K.	199
LACY, WILLIAM G.	196
LORRAINE, DAVID G.	192
Recalled	214
McLAIN, W. L. (In Rebuttal)....	510
PAINE, PAUL	69
Cross-examination	88
Redirect Examination	107
Recross-examination	113
Recalled	200
Cross-examination	202
Recalled—In Rebuttal	483
Cross-examination	498
Redirect Examination	505
Recross-examination	507
RAE, WILLIAM C.	208
Recalled	211
Cross-examination	211
Recalled—In Rebuttal	477
TRUMBLE, MILON J.	221
Cross-examination	226
Recalled—In Rebuttal	513
TESTIMONY ON BEHALF OF DEFENDANT:	
JOHNSON, WALTER P.	399
Cross-examination	402
Redirect Examination	404
LACY, WILLIAM G. (Recalled)....	452
Cross-examination	457

Index.	Page
TESTIMONY ON BEHALF OF DEFEND-	
ANT—Continued:	
LORRAINE, DAVID G.	230
Recalled	273
Cross-examination	298
Recalled	376
Cross-examination (Resumed)	376
Redirect Examination	390
Recross-examination	392
MACK, LUTHER L.	405
Cross-examination	418
Recalled	437
Cross-examination	437
PROUT, GEORGE H.	458
Cross-examination	461
SMITH, ROBERT W.	462
SWOAP, W. H.	447
Cross-examination	451
TROUT, WILLIAM A.	423
Cross-examination	429
Redirect Examination	435
WHARFF, A. A.	441
Cross-examination	446

Names and Addresses of Attorneys of Record.

For Appellant:

WESTALL and WALLACE, Esqs. (JOSEPH F. WESTALL and ERNEST L. WALLACE), 902 Trust and Savings Building, Los Angeles, California.

For Appellee:

FREDERICK S. LYON, Esq., and LEONARD S. LYON, Esq., 312 Stock Exchange Building, Los Angeles, California, and FRANK L. A. GRAHAM, Esq., Higgins Building, Los Angeles, California.

Citation.

UNITED STATES OF AMERICA,—ss.

To Francis M. Townsend, Milon J. Trumble and Alfred J. Gutzler, Doing Business Under the Firm Name of Trumble Gas Trap Company,
GREETING:

You are hereby cited and admonished to be and appear at a United States Circuit Court of Appeals for the Ninth Circuit, to be held at the City of San Francisco, in the State of California, on the 15th day of November, A. D. 1922, pursuant to an order allowing appeal filed and entered in the Clerk's office of the District Court of the United States, in and for the Southern District of California, in that certain suit being numbered E-113—Equity, wherein David G. Lorraine is defendant and you are plain-

tiffs to show cause, if any there be, why the decree rendered against the said appellant, as in the said order allowing appeal mentioned, should not be corrected, and speedy justice should not be done to the parties in that behalf.

WITNESS, the Honorable BENJAMIN F. BLEDSOE, United States District Judge for the Southern District of California, this 18th day of October, A. D. 1922, and of the Independence of the United States, the one hundred and forty-seventh.

BLEDSOE,
U. S. District Judge for the Southern District of California.

Due service of the above citation and receipt of a copy thereof is hereby admitted this 19th day of October, 1922.

FREDERICK S. LYON,
LEONARD S. LYON,

Solicitors and of Counsel for the Above-named Plaintiffs-Appellees. [1*]

[Endorsed]: E-113—Equity. In the United States Circuit Court of Appeals for the Ninth Circuit. Francis M. Townsend et al. vs. David G. Lorraine. Citation. Filed Oct. 20, 1922. Chas. N. Williams, Clerk. By L. J. Cordes.

*Page-number appearing at foot of page of original Certified Transcript of Record.

In the District Court of the United States, Southern District of California, Southern Division.

IN EQUITY—No. ——.

FRANCIS M. TOWNSEND, MILON J. TRUMBLE and ALFRED J. GUTZLER, Doing Business Under the Firm Name of TRUMBLE GAS TRAP CO.,

Plaintiffs,

vs.

DAVID G. LORRAINE,

Defendant.

Bill of Complaint for Infringement of Letters Patent No. 1,269,134.

Now come the plaintiffs in the above-entitled suit and complaining of the defendant above named allege:

I.

That plaintiffs, Francis M. Townsend, Milon J. Trumble and Alfred J. Gutzler are residents of the County of Los Angeles, State of California and citizens of said state.

II.

That defendant, David G. Lorraine, is a resident of the City of Los Angeles, State of California, and a citizen of said State.

III.

That the ground upon which the Court's jurisdiction depends is that this is a suit in equity arising under the patent laws of the United States.

IV.

That heretofore, to wit, on and prior to November 14th, 1914, said Milon J. Trumble was the original and first inventor of a certain new and useful invention, to wit, a crude petroleum and natural gas separator which has not been known or used by others in this country before his invention thereof, nor patented nor described in any printed publication in this or any foreign country before his said invention thereof, or more than two years prior to his application for a patent, nor was the same in public use or on sale in this country for more than two years prior to his application for a [2] patent in this country and being such invention, heretofore, to wit, on November 14th, 1914, said Milon J. Trumble filed an application in the Patent Office of the United States praying for the issuance to him of letters patent for said new and useful invention.

V.

That prior to the issuance of any patent thereon, said Milon J. Trumble, for value received, by an instrument in writing sold and assigned to Francis M. Townsend and Alfred J. Gutzler an undivided interest in and to aforesaid new and useful invention and in and to any and all letters patent that might be issued therefor on said application and in and by said assignment requested the Commissioner of Patents to issue said patent to said Milon J. Trumble, Francis M. Townsend and Alfred J. Gutzler, their heirs, legal representatives and assigns, which said assignment in writing was filed in the

Patent Office of the United States prior to the issuance of any letters patent on said application.

VI.

That thereafter, to wit, on June 11, 1918, letters patent of the United States for the said invention dated on said last-named day and numbered 1,269,134, were issued and delivered by the Government of the United States to the said Milon J. Trumble, Francis M. Townsend and Alfred J. Gutzler, whereby there was granted to Milon J. Trumble, Francis M. Townsend and Alfred J. Gutzler, their heirs, legal representatives and assigns for the full term of seventeen years from June 11, 1918, the sole and exclusive right to make, use and vend the said invention throughout the United States of America and the territories thereof, and a more particular description of the invention patented in and by said letters patent will more fully appear from the letters patent ready in court to be produced by the plaintiffs.

VII.

That plaintiffs ever since the issuance of said letters patent have been and now are the sole holders and owners of said letters patent and all rights and privileges by them granted, and have under the firm name of Trumble Gas Trap Co. [3] constructed, made, used and sold apparatus containing and embracing and capable of carrying out the invention patented by the said letters patent and upon each of said apparatus have stamped and printed the day and date of and the number

of said letters patent and the same have gone into general use.

VIII.

That at divers times within six years last past in the Southern District of California the defendant herein, David G. Lorraine, without the license or consent of the plaintiffs has used the apparatus described, claimed and patented, and has made and used the apparatus described, claimed and patented in and by the said letters patent No. 1,269,134, and has infringed upon said letters patent and each and all of the claims thereof, and intends and threatens to continue so to do.

IX.

That by reason of the infringement aforesaid plaintiffs have suffered damages and plaintiffs are informed and believe that the defendant has realized profits but the exact amount of such profits and damages is not known to plaintiffs.

X.

That plaintiffs have requested the defendant to desist and refrain from further infringement of said letters patent and to account to the plaintiffs for the aforesaid profits and damages but the said defendant has failed and refused to comply with such request or any part thereof, and is now continuing and carrying on the said infringement upon said letters patent daily and threatens to continue the same and unless restrained by this Court will continue the same, whereby plaintiffs will suffer great and irreparable injury and damage for

which plaintiffs have no plain, speedy or adequate remedy at law.

WHEREBY plaintiffs pray as follows:

I.

That a final decree be entered in favor of the plaintiffs, Francis M. Townsend, Milon J. Trumble and Alfred J. Gutzler and against the defendant David G. Lorraine perpetually enjoining and restraining the said defendant, his agents, servants, attorneys, workmen and employees, and each of them, [4] from using the apparatus described, claimed and patented in and by said letters patent No. 1,269,134, and from making, using or selling the apparatus described, claimed or patented in and by said letters patent and from infringing upon said letters patent or any of the claims thereof, either directly or indirectly or from contributing to any such infringement.

II.

That upon the filing of this bill of complaint or later on motion, a preliminary injunction be granted to the plaintiffs enjoining and restraining the defendant, David G. Lorraine, his agents, servants, attorneys, workmen or employees and each of them, until the further order of this Court from using the apparatus described, claimed and patented in and by said letters patent No. 1,269,134, and from making, using or selling the apparatus described, claimed and patented by said letters patent and from infringing upon said letters patent or any of the claims thereof either directly or in-

directly, or from contributing to any such infringement.

III.

That plaintiffs have and recover from the defendant the profits realized by the defendant herein and the damages suffered by the plaintiffs and by reason of the infringement aforesaid, together with the costs of suit and such other and further relief as to the Court may seem proper and in accordance with equity and good conscience.

FRANCIS M. TOWNSEND.

MILON J. TRUMBLE.

ALFRED J. GUTZLER.

FREDERICK S. LYON,

LEONARD S. LYON,

FRANK L. A. GRAHAM,

Attorneys and Counsel for Plaintiffs,

504 Merchants Trust Bldg.,

Los Angeles, California. [5]

State of California,

County of Los Angeles,—ss.

Francis M. Townsend, Milon J. Trumble and Alfred J. Gutzler, being duly sworn, each for himself, deposes and says that he has read the foregoing complaint and knows the contents thereof; that the same is true of his own knowledge except as to matters therein stated on information and belief and as to those matters, he believes it to be true.

FRANCIS M. TOWNSEND.

MILON J. TRUMBLE.

ALFRED J. GUTZLER.

Sworn to before me this 31st day of December, 1920.

[Seal] LOUIS W. GRATZ,
Notary Public in and for Los Angeles County,
State of California.

My commission expires July 21, 1924. [6]

[Endorsed]: No. E-113—Eq. United States District Court, Southern District of California, Southern Division. Francis M. Townsend, Milon J. Trumble and Alfred J. Gutzler, Plaintiffs, vs. David G. Lorraine, Defendant. In Equity. Bill of Complaint. Filed Jan. 3, 1921. Chas. N. Williams, Clerk. By R. S. Zimmerman, Deputy Clerk. Frederick S. Lyon, Leonard Lyon, Frank L. A. Graham, 504 Merchants Trust Bldg., Los Angeles, California, Attorneys for Plaintiffs. [7]

In the District Court of the United States, Southern District of California, Southern Division.

IN EQUITY—No. E-113.

FRANCIS M. TOWNSEND, MILON J. TRUMBLE, and ALFRED J. GUTZLER, Doing Business Under the Firm Name of TRUMBLE GAS TRAP CO.,

Plaintiffs,

vs.

DAVID G. LORRAINE,

Defendant.

Answer to Bill of Complaint.

Comes now David G. Lorraine, the defendant in the above-entitled cause, and, for answer to the bill of complaint of plaintiffs heretofore filed in this cause and to the several allegations therein contained, states:

I.

That he admits that the plaintiffs are residents and citizens of the County of Los Angeles and State of California.

II.

That he admits that this defendant is a resident and citizen of the city of Los Angeles and State of California.

III.

That he admits that this is a suit in equity arising under the patent laws of the United States.

IV.

That he denies that, on or prior to the 14th day of November, A. D. 1914, or at any other time, the said Milon J. Trumble was or now is the first or original inventor of any new or useful invention known or described as a crude petroleum and natural gas separator or that the same had not been known or used in this country before said alleged invention thereof by the said Milon J. Trumble, or that the same had not been patented or described in any printed publication in this or any foreign country for more than two years before said alleged invention thereof by the said Milon J. Trumble; or

[8] that the same was not in public use or not on sale in this country for more than two years prior to the alleged application of the said Milon J. Trumble for a patent therefor; this defendant states that he had not sufficient information to form a belief as to whether or not the said Milon J. Trumble did, on the 14th day of November, A. D. 1914, or at any other time, file an application in the Patent Office of the United States praying for the issuance to him of letters patent to any new and useful invention and, therefore, denies the same.

V.

That he has not sufficient information to form a belief concerning the truth of the allegations set out and contained in "Paragraph V" of said bill of complaint and, therefore, denies the same.

VI.

That he denies that, on June 11, 1918, or at any other time, letters patent of the United States for any new or useful invention were issued and delivered to the persons named in "Paragraph VI" of said bill of complaint or that said persons, or either, or any of them, or their heirs, personal representatives or assigns were granted the sole and exclusive right to make, use or vend any such alleged invention throughout the United States of America or the territories thereof. But this defendant states that the device described in the alleged letters patent granted to the plaintiffs is not a new or useful invention for the reason that said device is inoperative for the purpose stated

in said letters patent and for which purpose said device is used and that, therefore, said device lacks utility and, for that reason, said patent is invalid.

VII.

That he does not have sufficient knowledge or information to enable him to form a belief as to the truth or falsity of the allegations contained and set out in "Paragraph VII" of said bill of complaint and, therefore, denies the same. [9]

VIII.

That he denies that, at any time or times within six years last past, in the Southern District of California, or elsewhere, this defendant, without the license or consent of the plaintiffs or otherwise, has used, manufactured or sold any apparatus or device described, claimed or patented in or by any letters patent issued or delivered to the plaintiffs, or either or any of them, or to any person or persons through, by or under whom said plaintiffs or either or any of them claim; or that this defendant has, at any time, infringed upon and such pretended or alleged letters patent or any claim or claims thereof; or that he intends or threatens so to do.

IX.

That he denies that, by reason of any infringement of any letters patent or any other rights, by this defendant, or his agents, employees, licensees or assigns, the plaintiffs, or either, or any of them, have suffered any damages or that this defendant has realized any profits whatsoever thereby.

X.

That he denies that the plaintiffs, or either or

any of them, have requested this defendant to desist or refrain from any infringement of any letters patent or to account to plaintiffs, or either or any of them, for any profits or damages, or that this defendant has failed or refused to comply with any such request or any part thereof; or that this defendant is now or, at any time, has been committing or carrying on any infringement upon any letters patent or threatens to continue so to do; or that the plaintiffs, or either or any of them, will suffer any great or irreparable injury or damage thereby; or that the plaintiffs have no plain, speedy or adequate remedy at law.

XI.

And this defendant, for another and further answer and defense to said bill of complaint, states: That the alleged patent No. 1,269,134, issued June 11th, A. D. 1918, [10] to the plaintiffs, in its very nature and by reason of the many patents which were previously issued for similar devices, is a secondary patent and must, therefore, be strictly construed and confined to the specific form of invention therein described and claimed and that any construction of said patent broad enough to include the separator made by this defendant, would render such alleged patent to the said plaintiffs invalid, because of anticipatory devices patented and disclosed long prior to the filing of the alleged application on which the said alleged patent to the plaintiffs was finally issued; that some of these prior patents here referred to are as follows:

No. 428,399,	W. Moore,	May 20, 1890.
No. 578,708,	W. J. Baldwin,	March 16, 1897.
No. 681,170,	C. R. Hudson,	August 20, 1901.
No. 815,407	A. S. Cooper,	March 20, 1906.
No. 856,088,	A. T. Newman,	June 4, 1907.
No. 1,255,018,	P. Jones,	January 29, 1918.
No. 1,272,625,	W. H. Cooper,	July 16, 1918.

that there are also other patents and printed publications, the titles, dates and places of publication are, at this time, unknown to this defendant, but for all of which this defendant is causing diligent search to be made and which, when known, this defendant prays leave to insert and set forth in this answer.

XII.

And this defendant, further answering said bill of complaint, states that this defendant, heretofore, and on or before the 8th day of July, A. D. 1915, invented a certain new and useful invention for separating natural gas from crude petroleum for which he has filed an application for letters patent; that the claims in such application have been duly passed by the Examiner in charge of the application and allowed and a patent for such invention will issue in due course, upon the payment of the final Government fee.

And this defendant states that the device for separating natural gas from crude petroleum which he has made is made according to the specifications and claims made and [11] so allowed in his said application for letters patent, and for

which letters patent will be issued in due time and which said device the defendant states does not, in any manner whatsoever, infringe the alleged patent of the plaintiffs.

WHEREFORE, this defendant prays that the bill of complaint of the plaintiffs be dismissed and that this defendant be permitted to go hence with his costs in this behalf expended.

DAVID S. LORRAINE,

By CHAS. BAGG,

Solicitor for Defendant. [12]

[Endorsed]: No. E-113—Equity. U. S. District Court, Southern District of California, Southern Division in Equity. Francis M. Townsend et al. vs. David G. Lorraine. Answer. Received a copy of the within answer this the 28th day of January, 1921. Frederick S. Lyon, Leonard S. Lyon, Frank L. A. Graham, Attorneys for Plaintiffs. Filed Jan. 28, 1921. Chas. N. Williams, Clerk. Chas. Bagg, 632 Laughlin Bldg., Broadway 2555, Los Angeles, Attorney for Defendant. [13]

In the District Court of the United States, in and
for the Southern Division of the Southern
District of the State of California.

IN EQUITY—No. E-113.

FRANCIS M. TOWNSEND, MILON J. TRUMBLE and ALFRED J. GUTZLER, Doing Business Under the Firm Name of TRUMBLE GAS TRAP CO.,

Plaintiffs,

vs.

DAVID G. LORRAINE,

Defendant.

Notice of Motion.

To Francis M. Townsend, Milon J. Trumble and Alfred J. Gutzler, Plaintiffs in the Above-entitled Cause, and to Messrs. Frederick S. Lyon and Leonard S. Lyon, Their Solicitors:

You and each of you will please take notice that, on Monday, March 13th, 1922, at the hour of ten o'clock A. M. of said day, the defendant, David G. Lorraine, will call up for hearing the annexed motion for leave to amend defendant's answer, heretofore filed in this cause, before the Honorable Benjamin F. Bledsoe, Judge of the above-entitled court, at his courtroom in the Post Office Building, in the city of Los Angeles, State of California.

Dated March 2d, 1922.

CHAS. BAGG,
Solicitor for Defendant.

Service of the above and foregoing notice, together with a copy of the motion therein referred to, by copy, this the 3d day of March, A. D. 1922.

LYON & LYON,
GRAHAM & HARRIS,
Solicitors for Plaintiffs. [14]

In the United States District Court, in and for the Southern Division of the Southern District of the State of California.

IN EQUITY—No. E-113.

FRANCIS M. TOWNSEND, MILON J. TRUMBLE and ALFRED J. GUTZLER, Doing Business Under the Firm Name of TRUMBLE GAS TRAP COMPANY,

Plaintiffs,

vs.

DAVID G. LORRAINE,

Defendant.

Motion for Order Permitting Defendant to Amend Answer.

Comes now David G. Lorraine, the defendant in the above-entitled case and respectfully moves this Honorable Court for an order in this cause permitting this defendant to amend his answer heretofore filed in this cause in the following particulars to wit: By inserting in Paragraph XI of said answer the following list of patents in addition to

those inserted therein at the time of the filing of the same:

No. 426,880, Walter Anderson Taylor, April 29, 1890.

No. 1,014,943, Eustace Vivian Bray, January 16, 1912.

No. 535,611, James S. Bouger, March 12, 1895.

No. 611,314, Joseph S. Cullinan, September 27, 1898.

No. 399,427, William Moore, March 12, 1889.

No. 1,226,913, C. C. Scharpenberg, May 22, 1917.

No. 1,182,873, Charles E. Fisher, May 9, 1916.

No. 1,095,478, Fritz Strohbach, May 5, 1914.

CHAS. BAGG,

Solicitor for Defendant. [15]

[Endorsed]: No. E-113. United States District Court, Southern District of California, Southern Division. Francis M. Townsend et al., Plaintiffs, vs. David G. Lorraine, Defendant. Notice of Motion and Motion to Amend Answer. Filed Mar. 4, 1922. Chas. N. Williams, Clerk. By Edmund L. Smith, Deputy Clerk. Chas. Bagg, 632 Laughlin Bldg., Los Angeles, Cal., Solicitor for Defendant.
[16]

At a stated term, to wit, the January Term, A. D. 1922, of the District Court of the United States of America, within and for the Southern Division of the Southern District of California, held at the courtroom thereof, in the City of Los Angeles, on Monday, the 13th day of March, in the year of our Lord one thousand nine hundred and twenty-two. Present: The Honorable BENJAMIN F. BLEDSOE, District Judge.

No. E-113—EQ.

FRANCIS M. TOWNSEND et al.,

Plaintiffs,

vs.

DAVID G. LORRAINE,

Defendant.

Minutes of Court—March 13, 1922—Hearing.

This cause coming on at this time for hearing on motion to amend defendant's answer; now, both parties consenting thereto, it is by the Court ordered that this cause for hearing on said motion be continued to March 20th, 1922. [17]

At a stated term, to wit, the January Term, A. D. 1922, of the District Court of the United States of America, within and for the Southern Division of the Southern District of California, held at the courtroom thereof, in the City of Los Angeles, on Monday, the 20th day of

March, in the year of our Lord one thousand nine hundred and twenty-two. Present: The Honorable BENJAMIN F. BLEDSOE, District Judge.

No. E-113—EQ. S. D.

FRANCIS M. TOWNSEND et al.,

Plaintiffs,

vs.

DAVID G. LORRAINE,

Defendant.

**Minutes of Court—March 20, 1922—Hearing
(Continued).**

This cause coming on at this time for hearing on motion to amend defendant's answer, and it appearing that both parties have consented to the hearing on said motion being continued to March 27th, 1922, it is thereupon ordered by the Court that said motion be and the same is hereby continued to said date. [18]

At a stated term, to wit, the January Term, A. D. 1922, of the District Court of the United States of America, within and for the Southern Division of the Southern District of California, held at the courtroom thereof, in the City of Los Angeles, on Wednesday, the 22d day of March, in the year of our Lord one thousand nine hundred and twenty-two. Present: The Honorable CHARLES E. WOLVERTON, District Judge.

No. E-113—EQ.

FRANCIS M. TOWNSEND et al.,

Plaintiffs,

vs.

DAVID G. LORRAINE,

Defendant.

Minutes of Court—March 22, 1922—Hearing (Continued).

This cause coming on at this time for final hearing; F. S. Lyon, L. S. Lyon and Frank L. A. Graham, Esqs., appearing as counsel for plaintiffs, and Charles Bagg and L. L. Mack, Esqs., appearing as counsel for defendant, and John P. Doyle being also present as shorthand reporter of the testimony and proceedings; and all parties having announced themselves as ready to proceed with the hearing and a statement having been made on behalf of the plaintiffs by F. S. Lyon, Esq., attorney for the plaintiffs and he having announced that the specifications of the patent against which infringements are charged are Nos. 1, 2, 3, 4, and 13, and a statement having been made on behalf of the defendant by Charles Bagg, Esq., attorney for the defendant, and the plaintiffs in support of the issues on their side having offered in evidence the following exhibits, to wit:

Plaintiff's Ex. No. 1—Letters Patent No. 1,269,134
to Milon J. Trumble and
dated June 11, 1918.

Plaintiff's Ex. No. 2—Certified copy of File-wrapper and contents of same patent.

Plaintiff's Ex. No. 3—Copy of patent No. 1,373,664.

Plaintiff's Ex. No. 4—Copy of Reissue patent No. 15,220, dated November 8, 1921.

Plaintiff's Ex. No. 5—Small metal plate—Trumble Gas Trap Co.

which exhibits are admitted in evidence and filed; and [19]

Paul Paine, a witness herein, having been called, sworn and having testified on behalf of the plaintiff, and, in connection with his testimony, the following exhibit having been offered and admitted in evidence, as follows, to wit:

Plaintiff's Ex. No. 6—A Blue-print table of pressures, etc., and

Now, at the hour of twelve o'clock noon the Court declares a recess to the hour of two o'clock P. M. and

Now, at the hour of two o'clock P. M. the Court having reconvened and all parties being present as before except E. L. Kincaid, who is present as stenographic reporter of the testimony and proceedings; and

Paul Paine, a witness for the plaintiff, having resumed the stand and having given his testimony, and in connection with his testimony there having been offered and admitted in evidence the following exhibit, to wit:

Plaintiff's Ex. No. 7—Paine's Sketch of Stark Trap; and

Alfred J. Gutzler having been called, sworn and having testified in behalf of the plaintiff; and

O. W. Harris having been called, sworn and having testified in behalf of the plaintiff; and

In connection with his testimony there having been offered and admitted in evidence the following exhibits, to wit:

Plaintiff's Ex. No. 8¹—1 Photograph,

Plaintiff's Ex. No. 8²—1 Photograph,

Plaintiff's Ex. No. 8³—1 Photograph,

Plaintiff's Ex. No. 8⁴—1 Photograph,

Two sketches having been admitted as Plaintiff's Exhibits Nos. 9¹ and 9² and

The following having been admitted in evidence, to wit:

Plaintiff's Ex. No. 10—A Model of Lorraine Trap;

and

Leave is now granted to the plaintiffs to file a supplemental bill of complaint; and, good cause appearing therefor, this cause is continued to March 23, 1922, at the hour of ten o'clock A. M. for further hearing. [20]

At a stated term, to wit, the January Term, A. D. 1922, of the District Court of the United States of America, within and for the Southern Division of the Southern District of California, held at the courtroom thereof, in the City of Los Angeles, on Thursday, the 23d day of March, in the year of our Lord one thousand nine hundred and twenty-two. Present: The Honorable CHARLES E. WOLVERTON, District Judge.

No. E-113—Eq.

FRANCIS M. TOWNSEND et al.,

Plaintiffs,

vs.

DAVID G. LORRAINE,

Defendant.

**Minutes of Court—March 23, 1922—Hearing
(Continued).**

This cause coming on at this time for further hearing; F. S. Lyon and Frank L. A. Graham, Esqs., appearing as counsel for the plaintiff and Charles Bagg and L. L. Mack, Esqs., appearing as counsel for the defendants and John P. Doyle, being also present as shorthand reporter of the testimony and proceedings; and

A supplemental bill having been filed and defendant herein having been given until Monday, March 27, 1922, to file answer to supplemental bill; and

O. W. Harris, a witness herein on behalf of the plaintiff, having resumed the stand and having given his testimony; and

In connection with his testimony there having been offered and admitted for Identification the following exhibit, to wit:

Plaintiff's Ex. No. 11 for Identification—Drawing of Lorraine Trap; and said O. W. Harris having been temporarily withdrawn; and

Thomas T. Davies having been called, sworn and having testified in behalf of the plaintiff; and

O. W. Harris, witness temporarily withdrawn as aforesaid, having resumed the stand having testified further; and

David Lorraine having been called, sworn and having testified as a witness for the Plaintiff; and in connection with his testimony there having been offered and admitted on behalf of the [21] plaintiff the following exhibits, to wit:

Plaintiff's Ex. No. 12—Blue-print drawing produced by David G. Lorraine.

Plaintiff's Ex. No. 13—Account sales; and

Wm. G. Lacy having been called, sworn and having testified in behalf of the plaintiff; and in connection with his testimony there having been offered and admitted on behalf of the plaintiff the following exhibits, to wit:

Plaintiff's Ex. No. 14—Letter of December 10, 1920, Townsend to Lacy Manufacturing Company.

Plaintiff's Ex. No. 15—Letter of December 13, 1920, Lacy Manufacturing Company to Townsend; and

Hans K. Hyrup having been called, sworn and having testified in behalf of the plaintiff; and

It is now by the Court ordered that the drawing heretofore marked Ex. No. 11 for Identification be admitted in evidence as Plaintiff's Ex. No. 11; and

Paul Paine having been recalled and having taken the stand on behalf of the plaintiff; and

Wm. C. Rae having been called, sworn and having testified in behalf of the plaintiff; and

Now, at the hour of twelve o'clock noon it is by the Court ordered that a recess be taken to the hour of two o'clock P. M. and

Now, at the hour of two o'clock P. M. the Court having reconvened and all being present as before; and

Wm. C. Rae having resumed the stand on behalf of the plaintiff; and

David G. Lorraine having been recalled to the stand; and

It is by the Court ordered that the drawing produced by said witness be admitted and filed in evidence on behalf of the plaintiff, to wit: [22]

Plaintiff's Ex. No. 16—Blue-print drawing produced
by witness as aforesaid.

Plaintiff's Ex. No. 17—Sketch produced by witness
David Lorraine.

Plaintiff's Ex. No. 18¹, 18², 18³—Three prints from
drawings of Lorraine Gas
and Oil Separator; and

Milon J. Trumble having been called, sworn and having testified for the plaintiff; and in connection with his testimony there are offered and admitted in

evidence on behalf of the plaintiff the following exhibits, to wit:

Plaintiff's Ex. No. 19—Model of Trap "Lorraine 1922,"

Plaintiff's Ex. No. 20—Model Trumble Trap; and Thereupon the plaintiff rests; and

Now, at the hour of 2:31 o'clock P. M. the Court declares a recess for ten minutes; and now

At the hour of 2:41 o'clock P. M. the Court having reconvened and all being present as before and counsel having announced their readiness to proceed with the trial of this cause and counsel having ordered that this cause be proceeded with; and

Defendant in support of the issues on his side having called to the stand the defendant, David G. Lorraine, who has heretofore been sworn, and said defendant having given his testimony; and

Upon motion of counsel for the defendant it is by the court ordered that Defendant's Ex. "A" heretofore offered for Identification be admitted in evidence, as follows, to wit:

Defendant's Ex. "A"—Model;

—and the following exhibit having been offered in evidence on behalf of the defendant, to wit:

Defendant's Ex. "B"—Sketch made by witness;
—and pamphlet marked Defendant's Ex. "C" for Identification, then offered in evidence and objection having been interposed on behalf of the plaintiff, is now admitted in evidence for limited purposes; and

Now, at the hour of 4:02 o'clock P. M. it is by the Court ordered that this cause be continued to

the hour of ten o'clock A. M. [23] March 24th,
for further hearing. [24]

United States District Court, Southern District of
California, Southern Division.

IN EQUITY—No. E-113.

FRANCIS M. TOWNSEND, MILON J. TRUMBLE and ALFRED J. GUTZLER, Doing Business Under the Firm Name of TRUMBLE GAS TRAP CO.,

Plaintiffs,

vs.

DAVID G. LORRAINE,

Defendant.

Supplemental Bill of Complaint.

Come now plaintiffs above named and for their supplemental bill of complaint in the above-entitled suit, filed by leave of Court, further complaining, allege:

That on or about December 31, 1920, plaintiffs filed in this court their original bill of complaint against defendant alleging the invention by Milon J. Trumble of a certain invention in crude petroleum and natural gas separators and the grant, issuance and delivery to plaintiffs of letters patent of the United States numbered 1,269,134 on June 11, 1918, as in and by plaintiffs' original bill of complaint set forth, ready in court to be produced will more fully and at large appear; that plaintiffs

are now the owners of the exclusive right, title and interest in, to and under said letters patent and so have been ever since the filing in this court of plaintiffs' said original bill of complaint.

That since the grant, issuance and delivery of said letters patent, and since the filing of plaintiffs' said original bill of complaint, and within the Southern District of California, and elsewhere, defendant has manufactured, sold and caused to be used, and has offered for sale, crude petroleum and natural gas separators embodying and containing the invention [25] patented in and by said letters patent, particularly as pointed out and claimed by claims 1, 2, 3 and 4 thereof, and defendant threatens and intends to continue to manufacture, sell, offer for sale and sell the same, all without the license or consent of plaintiffs and in infringement of said letters patent; that said crude petroleum and natural gas separators so manufactured, sold, offered for sale and caused to be used by defendant since the filing of plaintiffs' original bill of complaint herein differs only colorably from the crude petroleum and natural gas separators manufactured, sold, offered for sale and caused to be used by defendant in infringement of plaintiffs' patent at the time of the filing of plaintiffs' original bill of complaint herein and each thereof, contains the combination of elements and invention pointed out, claimed and patented in and by each of said respective claims, 1, 2, 3 and 4 of said letters patent; that one of said crude petroleum and natural gas separators cause to be manufactured by defendant for defendant by Lacy Manufac-

turing Company, of Los Angeles, California, and by it sold on March 17, 1922, to General Petroleum Company, Los Angeles, California, and now in the possession of plaintiffs, ready in court to be produced as may be required, will illustrate and exemplify the crude petroleum and natural gas separators now being manufactured, sold, offered for sale and caused to be used by defendant as aforesaid.

That plaintiffs do not know, and pray discovery thereof, as to how many such separators defendant has made, caused to be made, or sold, or used, and prays discovery thereof, that defendant is realizing and has realized large profits from the manufacture and sale thereof and plaintiffs have suffered great loss, injury and damage thereby and are suffering great and irreparable damage and injury therefrom.

[26]

WHEREFORE, plaintiffs pray that defendant be enjoined both provisionally during the pendency of this suit and perpetually, from manufacturing, causing to be manufactured, selling, or offering for sale, or disposing of in any manner, or using, any crude petroleum and natural gas separators embodying or containing the invention patented in and by said letters patent and particularly set forth, pointed out and claimed in and by claims 1, 2, 3 and 4 thereof, and particularly from manufacturing, causing to be manufactured, selling or offering for sale, using or causing to be used, any crude petroleum and natural gas separator like or similar to the separator manufactured for defendant by said Lacy

Manufacturing Company and sold on March 17, 1922, to the General Petroleum Company aforesaid; and that defendant be required to account to and pay over unto plaintiffs all profits, gains and advantages realized by him from the manufacture, sale or use or such separators and all damages suffered by plaintiffs by reason of such infringing acts and that plaintiffs have judgment against defendant therefor and for their costs herein and for such other, further or different relief as may be just or equitable.

FRANCIS M. TOWNSEND,
MILON J. TRUMBLE,
ALFRED J. GUTZLER,
Plaintiffs.

FREDERICK S. LYON,
LEONARD S. LYON,
FRANK L. A. GRAHAM,

Attorneys for Plaintiffs. [27]

State of California,
County of Los Angeles,—ss.

F. M. Townsend, being first duly sworn, on oath says: That he is one of the plaintiffs in the above-entitled suit, that he has read the foregoing supplemental bill of complaint; that the same is true of his own knowledge except as to such matters and things as are therein stated on information and belief, and as to such he believes the same to be true.

F. M. TOWNSEND.

Subscribed and sworn to before me this 23d day of March, 1922.

[Seal] L. BELLE WEAVER,
Notary Public in and for the County of Los Angeles,
State of California.

[Endorsed]: No. E-113. United States District Court, Southern District of California, Southern Division. Francis M. Townsend et al., Plaintiffs, vs. David G. Lorraine, Defendant. In Equity. Supplemental Bill of Complaint. Service, by copy, this the 23d day of March, A. D. 1922, at 9:16 A. M. Chas. Bagg, Solicitor for Defendant. Filed March 23, 1922. Chas. N. Williams, Clerk. Lyon & Lyon. Frederick S. Lyon, Leonard S. Lyon, 312 Stock Exchange Building, Los Angeles, Cal., Solicitors for Plaintiff. [28]

At a stated term, to wit, the January term, A. D. 1922, of the District Court of the United States of America, within and for the Southern Division of the Southern District of California, held at the courtroom thereof, in the city of Los Angeles, on Friday, the 24th day of March, in the year of our Lord one thousand nine hundred and twenty-two. Present: The Honorable CHARLES E. WOLVERTON, District Judge.

No. E-113—EQ.

FRANCIS M. TOWNSEND et al.,

Plaintiffs,

vs.

DAVID G. LORRAINE,

Defendant.

**Minutes of Court—March 24, 1922—Hearing
(Continued).**

This cause coming on at this time for further hearing; F. S. Lyon, L. S. Lyon and Frank L. A. Graham, Esqs., appearing as counsel for the plaintiff and Charles Bagg and L. L. Mack, Esq., appearing as counsel for the defendant and G. J. Kaarnelly being present as stenographic reporter of the testimony and proceedings; and counsel for the respective parties having announced their readiness to proceed with the trial of this cause and the Court having ordered that this cause be proceeded with; and

David G. Lorraine, a witness for the plaintiff, resumes the stand and testifies further; and

In connection with his testimony there is offered and admitted on behalf of the defendant the following exhibit, to wit:

Defendant's Ex. "D"—Photograph of Lorraine Trap; and

Drawings produced by said witness having been offered in evidence by the plaintiff as Plaintiff's Ex. Nos. 19², and 19³, and counsel for the defendant having interposed his objection to the admission into

evidence of said exhibits and the Court having sustained defendant's objections, and the offer having been withdrawn by the plaintiff; and

Now, at the hour of twelve o'clock noon it is by the Court [29] ordered that a recess be taken to the hour of two o'clock P. M. to take autos to go to Trumble Plant at Alhambra to view a Lorraine Oil and Gas Separator and all parties having met at the said plant; and

Now, at the hour of 2:45 o'clock P. M. all appearances as before except L. L. Mack, one of the attorneys for the defendant, who is absent; and

The testimony of O. W. Harris, a witness heretofore sworn for the defendant, and of David G. Lorraine, the defendant, heretofore sworn in his own behalf, having been given; now,

At the hour of 3:55 o'clock P. M. the said cause is continued to be resumed at the courtroom on Monday, March 27th, 1922, at ten o'clock A. M. [30]

At a stated term, to wit, the January Term, A. D. 1922, of the District Court of the United States of America, within and for the Southern Division of the Southern District of California, held at the courtroom thereof, in the city of Los Angeles, on Monday, the 27th day of March, in the year of our Lord one thousand nine hundred and twenty-two. Present: The Honorable CHARLES E. WOLVERTON, District Judge.

No. E-113—EQ.

FRANCIS M. TOWNSEND et al.,

Plaintiffs,

vs.

DAVID G. LORRAINE,

Defendant.

**Minutes of Court—March 27, 1922—Hearing
(Continued).**

This cause coming on at this time for further hearing; F. S. Lyon, L. S. Lyon and Frank L. A. Graham, Esqs., appearing on behalf of the plaintiffs and Charles Bagg and L. L. Mack, Esqs., appearing on behalf of the defendant and John P. Doyle, being present as shorthand reporter of the testimony and proceedings, and counsel for the respective parties having announced their readiness to proceed with the trial of this cause and the Court having ordered that this cause be proceeded with and

David G. Lorraine thereupon resumes the stand for further examination; and

In connection with his testimony there is offered and admitted in evidence on behalf of the plaintiff the following exhibit, to wit:

Plaintiff's Ex. No. 20—Cut of Lorraine automatic Oil and Gas Separator, being page 46 of the Oil Weekly, of February 25, 1922.

and the following exhibits having been offered and admitted in evidence on behalf of the defendant, to wit:

Defendant's Ex. "E"—Certified copy of patent to George L. McIntosh;

Defendant's Ex. "F"—Certified copy of patent to Walter Anderson Taylor;

Defendant's Ex. "G"—Certified copy of patent to Arthur W. Barker;

Defendant's Ex. "H"—Certified copy of patent to Eustace Vivian Bray;

[31]

Defendant's Ex. "I"—Certified copy of patent to Augustus Steiger Cooper;

Defendant's Ex. "J"—Certified copy of patent to Albert T. Newman; and

Walter P. Johnson and Luther L. Mack having been respectively called, sworn and having testified; and

Now, at the hour of 11:51 o'clock A. M. the Court declares a recess to the hour of two o'clock P. M.; and

Now, at the hour of two o'clock P. M. the Court having reconvened and all being present as before; and

Wm. A. Trout having been called, sworn and having testified in behalf of the defendant; and

In connection with his testimony there having been offered and admitted in evidence on behalf of the defendant the following exhibit, to wit:

Defendant's Ex. "K"—Sketch made by witness; and

A. A. Wharff having been called, sworn and having testified in behalf of the defendant; and

In connection with his testimony there having been offered and admitted in evidence on behalf of the defendant the following exhibit, to wit:

Defendant's Ex. "L"—Pencil sketch made by witness; and

W. H. Swope having been called, sworn and having testified in behalf of the defendant; and

In connection with his testimony there having been offered and admitted in evidence on behalf of the defendant the following exhibit, to wit:

Defendant's Ex. "M"—Pencil Sketch; and

Wm. G. Lacy having been recalled to the stand and having given his testimony; and

In connection with his testimony there having been offered and admitted in evidence on behalf of the defendant the following exhibit, to wit:

Defendant's Ex. "N"—Letter dated June 14, 1921,

F. M. Townsend to Lacy
Mfg. Co. [32]

Defendant's Ex. "O"—Letter dated June 15, 1922,
Lacy Mfg. Co. to Townsend.

Defendant's Ex. "P"—Letter dated December 29, 1920, Dr. W. P. Keene to
Lacy Mfg. Co.; and

The following exhibit having been offered and admitted in evidence on behalf of the plaintiff, to wit:

Plaintiff's Ex. No. 21—Photo; and

George H. Prout having been called, sworn and

having testified in behalf of the defendant; and

Now, at the hour of 3:30 o'clock P. M. it is by the Court ordered that a recess be taken for ten minutes; and now

At the hour of 3:40 o'clock P. M. the Court having reconvened and all being present as before; and

Robert W. Smith having been called, sworn and having testified in behalf of the defendant,

It is now by the Court ordered, good cause appearing therefor, that this cause be continued to Tuesday, March 28th, 1922, at the hour of 10 o'clock A. M. [33]

At a stated term, to wit, the January Term, A. D. 1922, of the District Court of the United States of America, within and for the Southern Division of the Southern District of California, held at the courtroom thereof, in the city of Los Angeles, on Tuesday, the 28th day of March, in the year of our Lord one thousand nine hundred and twenty-two. Present: The Honorable CHARLES E. WOLVERTON, District Judge.

No. E-113—EQ.

FRANCIS M. TOWNSEND et al.,

Plaintiffs,

vs.

DAVID G. LORRAINE,

Defendant.

**Minutes of Court—March 28, 1922—Hearing
(Continued).**

This cause coming on at this time for further hearing; F. S. Lyon, L. S. Lyon and Frank L. A. Graham, Esqs., appearing as counsel for the plaintiffs and Charles Bagg and L. L. Mack, Esqs., appearing as counsel for the defendant, and John P. Doyle being also present as shorthand reporter of the testimony and proceedings; and counsel for the respective parties having announced their readiness to proceed with the trial of this cause and the Court having ordered that this cause be proceeded with; and

An answer to the supplemental bill of complaint having been filed and the defendant having rested; and

W. C. Ray and Paul Paine having been respectively recalled by the plaintiff in rebuttal; and

A portion of Lorraine trap cut from Lorraine trap heretofore exhibited to the Court, having been marked Plaintiff's Ex. No. 22 for Identification; and

W. L. McLaine having been called, sworn and having testified in behalf of the plaintiff; and

M. J. Trumble having been recalled to the stand on behalf of the plaintiff; and

It having been ordered by the Court, on motion of counsel for the plaintiff, that the Plaintiff's Exhibit No. 22 heretofore offered for Identification be admitted in evidence, to wit: [34]

Plaintiff's Ex. No. 22—Portion of trap; and

There having been offered and admitted on behalf of the plaintiff the following exhibit, to wit:
Plaintiff's Ex. No. 23—Pressure Gage; and

O. W. Harris, having been recalled to the stand and having testified; and

There having been offered and admitted on behalf of the plaintiffs the following exhibit, to wit:
Plaintiff's Ex. No. 24—Harris Pencil sketch.

And now the plaintiffs rest; and

The defendants having rested; and

A stipulation having been entered into by respective counsel that Judge Wolverton may sign decree in this cause outside of District, said written stipulation to be filed, it is by the Court ordered, at the hour of 11:22 o'clock A. M. that a recess be taken to the hour of two o'clock P. M.; and

Now, at the hour of two o'clock P. M. the Court having reconvened and all parties being present as before and the plaintiff having moved the Court to strike from the record Defendant's Exhibit "C," being a pamphlet issued by the Department of the Interior, and the motion having been taken under advisement with the allowance of an exception on behalf of either party; and

F. S. Lyon, Esq., having argued to the Court on behalf of the plaintiff; and

Charles Bagg, Esq., having argued to the Court on behalf of the defendant; and

F. S. Lyon, Esq., having argued in reply,—

Thereupon said cause was submitted to the Court upon the oral arguments and upon briefs to be filed by the plaintiff on or before Monday, April third,

1922, and by the defendant within seven days thereafter, and by the plaintiff in reply within seven days thereafter; and

At the request of John P. Doyle, shorthand reporter as aforesaid, it is by the Court ordered that said John P. Doyle [35] be permitted to temporarily take from the files such of the paper exhibits as he may need in transcribing his notes; and

Thereupon the Court on his own motion having directed that two enlargements of the drawings of the Trumble patent which had been used to illustrate the testimony and arguments, be filed as Plaintiff's Exhibits Nos. 25 and 26; and

Thereupon at the hour of 4:00 o'clock P. M. the Court declared a recess to the hour of ten o'clock A. M. Wednesday, March 29th, 1922. [36]

United States District Court, Southern District of California, Southern Division.

IN EQUITY—No. E-113.

FRANCIS M. TOWNSEND, MILON J. TRUMBLE and ALFRED J. GUTZLER, Doing Business Under the Firm Name of TRUMBLE GAS TRAP CO.,

Plaintiffs,

vs.

DAVID G. LORRAINE,

Defendant.

Answer to Supplemental Bill of Complaint.**I.**

Comes now the defendant, David G. Lorraine, and for answer to the supplemental bill of complaint heretofore filed in this cause on the 23d day of March, A. D. 1922, states:

That he admits that on or about December 31st, 1920, the plaintiffs filed in this court their original bill of complaint against defendant alleging the invention by Milon J. Trumble, admits, for the purpose of this suit, that the plaintiffs are now the owners.

This defendant denies that, at any time, since the grant, issuance or delivery of said letters patent or since the filing of plaintiff's said original bill of complaint, or at all, or within the Southern District of California or any other place, he has manufactured, sold or caused to be used, or has offered for sale, any crude petroleum and natural gas separators or any other device, in any manner embodying or emulating any invention patented in or by said letters patent, or of claims 1, 2, 3, or 4 thereof. Defendant denies that he has threatened or is now threatening or intends to continue to manufacture, sell, offer for sale and sell, any device or apparatus in any manner infringing upon the device described in said letters patent, or any of [37] the claims thereof. Defendant denies that any crude petroleum and natural gas separator manufactured or caused to be manufactured by

this defendant or for the defendant by the Lacy Manufacturing Company, of Los Angeles, or any other person, firm or corporation, sold to or purchased by the General Petroleum Company or now in the possession of plaintiffs will show any device that in any manner or way infringes upon any letters patent granted to the said Milon J. Trumble or to any other person, other than to this defendant, or to any claim or claims thereof.

This defendant denies that he is realizing or has realized large profits from the manufacture or sale of any device whatsoever which, in any manner infringes upon any letters patent granted to the said Milon J. Trumble or to any other person, or to any claim or claims thereof; and this defendant denies that, by reason of any acts or conduct on the part of this defendant, the plaintiffs or either or any of them have suffered or are suffering any great or irreparable damage or injury.

II.

And this defendant for another and further answer and defense to said supplemental bill of complaint hereby adopts, reiterates and reaffirms each and every all and singular, the denives and allegations set out in paragraphs IV, V, VI, VIII, IX, X, XI, and XII, of his answer to plaintiff's original bill of complaint, to the same extent as though actually set out herein.

WHEREFORE, this defendant, having fully answered said supplemental bill of complaint, prays that said supplemental bill of complaint be dis-

missed and that this defendant be permitted to go hence with his costs in this behalf expended.

DAVID G. LORRAINE,
By CHAS. BAGG,
Attorney for Defendant. [38]

[Endorsed]: Equity—No. E-113. In the United States District Court for the Southern District of California, Southern Division. Francis M. Townsend et al., Plaintiffs, vs. David G. Lorraine, Defendant. Answer to Supplemental Bill of Complaint. Filed March 28, 1922. Chas. N. Williams, Clerk. Chas. Bagg, Solicitor for Defendant. [39]

In the District Court of the United States for the Southern District of California, Southern Division.

(Before Hon. CHARLES E. WOLVERTON,
Judge.)

No. E-113—EQ.

FRANCIS M. TOWNSEND et al.,
Plaintiffs,

vs.

DAVID S. LORRAINE,
Defendant.

Reporter's Transcript of Testimony and Proceedings.**APPEARANCES:**

F. S. LYON and LEONARD S. LYON, Esqs., for Plaintiffs.

CHARLES BAGG, Esq., for Defendant.

Los Angeles, California, March 22, 1922.

INDEX.

Plaintiff's Witnesses:	Page No.
	Dr. Cr. Red. Rec.
Paul Paine	26 45 66 72
A. J. Gutzler.....	74 78
O. W. Harris	79

[40]

It is stipulated by and between counsel for the respective parties that the reporter's notes may be immediately transcribed and the original copy filed, and that the reporter provide each side with a copy thereof and that originally each side shall pay one-half of the cost of the transcript and copies will be taxable as costs in accordance with the court order for costs.

Mr. BAGG.—So stipulated.

Los Angeles, California, Wednesday,
March 22, 1922, 10 A. M.

The COURT.—Are the parties ready for trial in the case of Townsend vs. Lorraine?

(Both sides announced ready.)

Mr. F. S. LYON.—If your Honor please, this is

a suit for infringement of patent. It is the ordinary suit for preliminary equitable relief and also for an accounting of profits and damages. The plaintiffs are the grantees of the patent issued to Milon J. Trumble, and is for an invention embodied in a device for separating oil and natural gas as the combination issues from an oil well.

In the production of crude oil many of the wells contain large quantities of natural gas, and in the earlier times that natural gas was dissipated and wasted. The time came here in California when it was desirable also to conserve that natural gas and the problem that faced Mr. Trumble was to produce a device by which the oil and gas might be economically separated and the gas conducted off to the source of either use or storage and the oil conducted to such storage as desired or to the point of transportation.

The problems that presented themselves to Mr. Trumble he solved in a very simple manner, and I shall present to your Honor a copy of the patent in suit and also a reproduction of the main view of that patent on a large scale, so that it may be more readily understood. [41]

The device in which Mr. Trumble actually embodied his invention is illustrated in Fig. 2 of the patent, a reproduction of which I now produce, as a large drum or vessel (1) having a large chamber into which the oil and gas from the well came in—in the particular embodiment shown in the drawings of the patent—at the top, and the intermingled oil and gas was then delivered under the pressure of

the oil, reduced somewhat as they always reduce it at the flowing nozzle of the well which would deliver on to a surface in the form of a cone in this embodiment where it was directed; also that it flowed down a shelf or wall of the container in a thin body, thereby, as the oil went down, giving all parts of the oil in a thin body a chance to relieve itself, as you may say, of the gas contained in the oil, and the gas then could flow up through the outlet without going through the body of incoming oil and gas again.

The one great feature of that invention was this: that, the thin body of oil being delivered in thin and comparatively quiet condition, the oil could be separated from the gas without the gas taking up from the oil as much of the light part or gasoline vapors as would be taken up and carried off by it if it was just blown in in a mist and in an entire whirl; and also it is found that if it were simply allowed without separation first to issue into a solid body with a large depth then the gas bubbles would find some difficulty more or less, depending upon conditions, in getting through the body of oil, and then also as, apparently, the gas bubbles expanded they would take up larger amounts of the gasoline or lighter contents of the oil.

The specific invention, then, embodied a chamber and a means whereby the incoming stream of oil was directed upon a wall where it flowed down, and the outlet for gas being free at one side or at the center, so that the relieved gas would immediately escape, collecting the oil in the bottom of the cham-

ber, where it, by means of a suitable float-operated valve, could be discharged intermittently, the device being entirely automatic in that regard. [42]

As the evidence that I shall produce shall further explain the invention to your Honor in detail I shall content myself in the opening with simply stating that after the commercial installation of a large number of these Trumble traps in the oil fields of California, they having become the standard equipment for that purpose, the defendant, who had been previously in other business and who had become familiar with the Trumble gas patent, entered the field as a competitor. He at first manufactured a device which is covered by a patent which he took out, and subsequently he has changed the form of that device to a second form. The defenses, as I understand them, are solely a defense of noninfringement.

With that statement I will content myself for the present.

Mr. BAGG.—If your Honor please, I think counsel should specify at this time in what respect or in what claims his contention is that we are infringing that patent, and that the burden is upon him to show that we are infringing; and in his opening statement he should state in what respect, so that the Court and counsel may know, and in what claim, the alleged infringing device manufactured and sold by the defendant, infringes the patent, and the claims set out by counsel for plaintiffs.

I think we are entitled to know that, and I think the Court is entitled to know it.

Mr. LYON.—We charge that the devices of the defendant infringe Claims 1, 2, 3, 4 and 13 of the patent in suit. I thought that information had already been given.

Now, I might state, for your Honor's convenience, if you wish it, that Claim 1 calls for this general combination, and I will use the specific embodiment of this invention which is shown in Fig. 2 in illustrating that:

"The combination of an expansion chamber"—which is the chamber inside of the vessel (1)—"arranged to receive oil and gas in its upper portion"—the oil and gas coming in at the top—"means for spreading the oil over the walls of such chamber to flow downward thereover"—the means being a baffle or other directing [43] device which will direct it onto the wall so that it will slide down the wall in a thin body and, in the specific embodiment here, these cones or deflectors. "Gas take-off means arranged to take off the gas from within the flowing film of oil"—and that is the outlet here through this pipe, and, as you will notice, it is in between the body of oil in there, or if you only use one-half of it it doesn't mix with the stream that is on the shelf as I stated. "An oil collecting chamber below the expansion chamber." There is, down below, oil collected in here so as to be above this valve and to be discharged to the bottom. "An oil outlet"—at the bottom—"from said collecting chamber and valve-controlled means arranged to maintain a submergence of the oil outlet." Here is the float on the valve, and that is the valve-control means he is

speaking of (indicating). So that that is just a general claim of a general combination.

Now Claim 2 differs from that mainly in that it calls for a means for maintaining gas pressure upon the oil in here, that is, means of suitable regulating valve, which will hold back the pressure of the gas to the degree or the pressure desired. And Claim 3 differs in this: "In an oil and gas separator, the combination of an expansion chamber having a surface adapted to sustain a flow of oil thereover in thin body"—that is the wall or any other surface over which the oil is directed so that it spreads out. "Means for distributing oil onto such surface." And the specific embodiment of the cone might be a nozzle so long as it is carried over and directed on to, as you see, means for distributing oil on to such surface. "Pressure-maintaining means adapted to maintain a pressure on one side of the flowing oil." Now, of course this valve alone wouldn't do it if the other end was open, so that when you speak of valve means there must be a pressure-regulating valve somewhere on the gas outlet and the oil outlet must also be closed or we would not maintain pressure. "Withdrawing means arranged to take gas from the chamber." That is the outlet pipe. "And means for withdrawing the oil from the chamber."

Now Claim 4 is substantially the same general claim: (Reading same.) And Claim 13 is the general combination of—(Reading [44] claim.) That claim is not specifically limited by inclusion, by

positive word, of the outlet means—of the valve mechanism here (indicating).

Mr. BAGG.—If your Honor please, I still think it is incumbent upon counsel in making his opening statement to make some statement as to in what respect or what kind of a device we have built or put on the market which infringes his device. I think he ought to, for the benefit of the court as well as counsel for defendant, make some statement which would indicate to the Court what kind of a device we were manufacturing and in what respects it infringed the patent.

The COURT.—Is that device set out in the pleadings?

Mr. BAGG.—No; it simply sets out the fact that we are infringing; and we did not know until counsel vouchsafed the information this morning as to exactly what claims he is contending we infringe. Of course now he has outlined that, but it seems to me it is incumbent upon him to make a statement for the benefit of the Court and counsel and describe what kind of an apparatus we are putting out and how it infringes and in what respect.

Mr. LYON.—I have not the slightest objection to stating what our position is, your Honor, in regard to what the defendant's device is.

The COURT.—Very well; make a statement.

Mr. LYON.—In the first place, the answer alleges that the defendant is manufacturing its devices in accordance with a certain invention for which an application for patent is pending, and I refer in

that regard to paragraph 12 in the answer; and I suppose counsel for defendant will admit that the application referred to in the paragraph was the application for the defendant's patent No. 1,373,664, which issued April 5, 1921, will you (handing patent to counsel) ?

Mr. BAGG.—Yes.

Mr. LYON.—And that is the device you admit in the answer you are manufacturing and using?

Mr. BAGG.—Yes. [45]

Mr. LYON.—And manufacturing and using it as described and disclosed in that patent?

Mr. BAGG.—Well, not exactly; no. We will not admit that we are making a trap just exactly as those drawings indicate.

Mr. LYON.—Well, substantially, so far as the mode of operation—

Mr. BAGG.—Substantially in conformity with the patent, yes.

Mr. LYON.—In the device, the Loraine trap, we have an oil and gas inlet from the wall which is indicated as 14. In this enlargement that I now present before you, your Honor, the oil enters into the general expansion chamber 2 at the side. Mr. Loraine instead of using the whole of the round chamber, has used only half of the chamber in this construction, cutting down the capacity as you will see in a moment, keeping the entire mode of operation the same. The oil and gas enters through the pipe 14, are diverted into a separator or directing device 17, the oil and gas being directed in a thin body

along the wall 2 until the oil, with such sand or water, or whatever it contains drops into the bottom of the chamber. The gas in such a device flows up under the separator, through a port and out through the gas outlet. Part of it, may, perhaps, although the drawing is not clear, go through a little port I now point to. The specification of the patent says nothing about whether it does or does not. In the actual device that we have examined, the escaping gas went up underneath the separator, and corresponding in that regard and even in that detail of construction to the plaintiff's operation, where the oil and gas comes down and run on the side of the wall in a thin body; the gas goes up through underneath and through this outlet, corresponding in detail in that regard. The device is also provided with a float valve mechanism by which the amount of oil is retained in the device until it gets to a certain level and then automatically discharges in the same manner. The gas pressure regulating-valve 28 as shown in the specifications is not on this enlargement, because this enlargement is without figure 2, but it [46] is shown and described in the specifications and it is referred to in a number of places in the body of the description.

Now we contend, then, that in this device patented to *Lorraine*, he has, as called by claim 1 of the patent the combination of an expansion chamber and it is immaterial for that purpose whether we refer to the whole of his chamber here or just this portion that is on the side, because that is an expansion

chamber and the gas comes out there, some gas may come out here, depending upon the level of the oil. (Indicating.)

The COURT.—Is this a complete chamber?

Mr. LYON.—Well, it is complete to this extent: This is a wall which is cut right across on that (indicating). Mr. Harris, have you got a model? We have a model.

The COURT.—It cuts off a segment?

Mr. LYON.—It cuts off a segment of the chamber. I have got a glass model that it can be seen on very much more readily. This glass model will illustrate all except the float. As your Honor understands it is made of glass for convenience. This wall here represents that wall (indicating), and here is 17; here is the inlet pipe; here is the gas escape there—or some of it might escape through in there, we don't know, the patent doesn't tell us that. Now, then, after that was manufactured we brought this suit, and I show your Honor that each one of these four claims apply to that device, because it has, as called for in the claims, the expansion chamber adapted to receive gas; in its upper portion it has means for spreading the oil; it has got practically the same means, except he only uses half of it, over the wall of such chamber, in a thin flow downwardly, the oil flowing downwardly here, and we will demonstrate that by simply putting water in there. If your Honor wants to, you will see that the water under a head pressure will flow down because of the take-off means to take the gas from the thin flowing

film of oil, an oil collecting chamber below the expansion chamber; and then he has his oil outlet which we have not shown in the model. The oil outlet is here (indicating), that is for the oil, water and gas. [47]

The COURT.—For the oil, water and gas.

Mr. LYON.—Yes. And the oil outlet is from this pipe here,—in this particular view it doesn't show—it comes right out to this pipe 32 which is connected with this here, and he maintains at least that much of a body of oil anyway, so that when he maintains that height of oil, the oil being up here (indicating), you see this is his expansion chamber (indicating), and he uses only this portion of the device for the operation. Possibly a small amount of interned gas here might escape if there was any; if so there is an open communication at the top and it can go over here to where the pressure that is maintained on this whole system by the valve that I pointed out is on the whole anyway. And here is his float and valve for the valve control means.

Now, I pointed out that he has the valve maintaining pressure, if desires, and to regulate it as desired, and when we take the third claim, "in an oil and gas separator," the combination of the expansion chamber having a surface adapted to sustain a flow of oil thereover in a thin body" there is his surface and there is his chamber as he uses it (indicating). There is the surface of the thin body of oil flows down so as it rolls over the interned gas can come out readily, and the gas is separated without

picking up a large quantity of gasoline vapor and that it may readily get out, and another object, where the gas pressure is high, the purpose of maintaining the pressure here is to prevent formation of a heavy emulsion which cannot break.

Take the next element, means for distributing oil on to the surface, he has practically identically our same means only not quite so full circumference of cylinder, of full chamber—he cut it in two. He has a pressure-maintaining means adapted to maintain a pressure, that is this valve (indicating), and he has a withdrawing means to take the gas off, and he has means for withdrawing the oil. Those are the claims of claim 3 and they may be pointed out in claim 4 in the same manner. [48]

Now we come down to the more limited claim, 13, which is the most limited claims of the ones we are charged to infringe. We find it is “in an oil and gas separator, an expansion chamber; inlet means for feeding a foam composed of oil and gas through the central part of the expansion chamber; and imperforate spreader cone,”—without perforations in it—“having its apex pointing upwardly,” it is up at this end (indicating), contending that that is the absolute equivalent, cutting off half of it, making no changes in the mode of operation or the effect, only cutting off the capacity, and that will be the evidence, we believe. (Continuing reading.) “located inside said chamber in such a manner as to spread a thin film of oil over the inner wall of said chamber,” and the wording “inner” there means as distin-

guished from the outside, because in our device also we don't have a wall like that so that it is unnecessary to this wall we are speaking of, but it is the inside of a shell and not the outside that is mentioned by the word "inner" there—(Continuing reading:) "and means for taking gas from the central portion of said chamber." Mr. Harris, will you let me have a model of our device and the model 1922? I made a glass model. There would be the type of ours with two cones (indicating), and you see the gas outlet under that cone, or under that one (indicating)? The oil and gas comes through the top. Of course, on this model we haven't put in the valve mechanism, the float mechanism—of course you readily understand the patent is not limited to that.

Now Mr. Lorraine, we have discovered since the suit was brought, also has changed this device of his and attempted to retain our invention and yet get away from some of the appearance of it; so that instead of using the particular deflector which is shown in the patent to Lorraine and the particular gas outlet there he has put into the shell of his device two partition members or plates, and he has brought his gas and oil in at the top. He has put in a nozzle which directs the oil the same as our spreading device of our patent. There is this plate which corresponds to [49] his plate or partition 19 and also on to the inner face of the shell of his chamber, so that it flows down in a thin film down both the inner face of the chamber and to some extent to the face of the plate on the other side, which

corresponds as a matter of fact to the other side, the other near side of our chamber, in effect.

The COURT.—Well, how is that deflected on this side, anyway?

Mr. LYON.—Well, I am going to give you that in just a minute. Now he takes off his gas from the top here, through this cross pipe, and it crosses over and goes down this chamber that is formed by this one down under there and up out through. He gives his gas a narrow passage up at the top there in order to get out. You asked me how the gas got out, didn't you?

The COURT.—No, I asked you how the oil was deflected on this side of the chamber, on the side of the chamber (indicating)?

Mr. LYON.—By this pipe. The oil comes into the pipe at the side here, and then this nozzle device, because it is flared in the manner it is distributes the oil in a thin film on both of those plates on this side. I can illustrate that very readily if your Honor desires by simply getting a can of water and attaching it here and you can see it poured down there, then, in that device. We maintain that this device infringes all of these claims with the possible exception of claim 13. Claim 13, as I have pointed out, called for the specific "imperforate spreader cone, having its apex pointed upwardly" and that has this cone here with its apex pointed upwardly. Now, perhaps, unless under a direct doctrine of equivalents, that is not found in this device. This device with the turn and the flare does exactly the same thing, but it

is not necessary in this case that we find that that claim; claim 13, is infringed in this device, because if we apply it to the other four claims we find that they are in no manner limited to the particular spreading device that we have. On the contrary, claim 1 shows a "means for spreading oil over the wall of such chamber to flow downwardly thereover," but it is in claim [50] 2 and claim 3 which says "the combination of an expansion chamber having a surface adapted to sustain the flow of the oil thereover in a thin body, means for distributing oil onto such surface." It is not the cone it is limited to, and claim 4 is the same; so that the claims of the patent as they are allowed and issued do not limit us to the specific details of construction but are broad enough to cover the really broad invention of this man Trumble did make. I think that complies even with the request of counsel and I will offer in evidence, first, the patent in suit, being the Trumble patent number—

The COURT.—Did you have any more remarks to make?

Mr. BAGG.—I would like to make a statement for the defense.

The COURT.—Very well.

Mr. BAGG.—As counsel on the part of the defendant, we desire to state in the first place, this patent issued to Mr. Trumble is a combination patent, every one of whose elements are old, and that there is nothing new except perhaps in the combination of the old elements. This evidence will disclose the fact that the principle of all oil and gas

traps is exactly the same, that they work on the principle of, I presume the best way, I might not be correct in my geography, but we will take the Great Lakes; Lake Huron and Lake Erie are connected by two rivers. The water flows from Lake Huron into Lake Erie and spreads out through that great space of water; then at the outlet of Lake Erie, as I understand it—as I say I might not be correct in my geography—but as I understand the Niagara Falls is there, and the water then rushes out there and as the water comes in it comes in with great force and great rapidity, and as it goes out it goes out with great force and great rapidity in the same way, but in the center, because of that large expanse of the lake there is practically no movement. Now the principle of all oil and gas separators is based upon that one principle, that you put a large quantity of oil and gas as it comes from the well, and as counsel on the other side has described it, it comes there thoroughly impregnated in a great many instances with various degrees of oil and gas and water [51] and sand. Now, the purpose of these oil and gas separators as he states is to allow these various elements to separate with the degree of their specific gravity, of course the sand falling to the bottom, the water next, the oil next and the gas coming off on top. This accomplished by this flowing down process. As the oil comes rushing into these oil and gas separators the capacity of them being so much larger than the inlet, it naturally flows down to practically no movement of the oil in this separator. That gives then the same a chance to drop to the

bottom, the water next and the oil next and the gas comes out on top. Then there is a means of outlet; instead of having one outlet they have one outlet for the gas which is up high on top where the gas floats to; the next is the oil outlet which allows the oil to pass on into its proper receptacle, and then at the bottom there is a vent, a place where they can take out the sand and water which is waste, of course, saving the two valuable elements, the gas and the oil, and carrying it respectively to their places of use. Our contention will be that this principle in these oil and gas separators are almost as old as the oil industry itself; that the first oil and gas separator, our evidence will show, was made in 1856, and that there have been since that time many, many kinds of oil and gas separators made, and we don't know exactly how many, but there have been hundreds of them, probably thousands of them made; that there is nothing new in any of them so far as the principle of the construction of these various elements which controls the petroleum as it comes from the oil well. There is nothing new in the principle. The only thing that is new is that it may have different combinations such as counsel on the part of the plaintiff has described for his particular instrument. We are not going to contend that the patent granted to Mr. Trumble is insufficient or invalid. Now then, that being the case, his patent being a combination all of whose elements are old, our contention will be that unless he shows that we, by our apparatus do exactly the same thing that he does and exactly in the same way, we do

not infringe, and that unless [52] we have all of the elements in our combination, if ours is a combination, that he has in his combination or their equivalent we do not infringe. Our first contention then will be that in every element or in every claim that he has he has what is called an expansion chamber. Our contention will be that we have no expansion chamber in our trap; that because of the history of his invention and because of the developments that took place in the patent office at the time his patent was pending, as shown by the file-wrapper which we will introduce, he is precluded from claiming anything except exactly what he describes in his patent. In other words, that his will be limited to cones in each and every instance, and a cone is not a *bassle* plate, and of course I take it that your Honor understands that just as well as we do.

The next contention will be that we do not spread the oil in any of our apparatus or any of the traps that we have put out in any thin film. We will contend that he is bound to spread the oil over the surface of his retaining wall or his retaining sides of his trap in a thin film. Our contention will be that the word "thin" and the word "film" mean exactly what they say and that the oil must be spread in a very thin film. Now, our contention will be that, while perhaps the word "thin" is a comparative term, what might be thin in one instance would be as grossly thick in another, but when you come down to describing a film, our contention will be that the cause of the interpretation placed upon it by his

representatives at the time the patent was being granted, or being—at the time the patent was being carried through the patent office, that they are limited to a film of oil and not to any thin body of oil.

Our contention will further be that we do not spread a thin film or even a thin body of oil upon the face of this chamber; that this deflector, as he has described it here, is so wide in our trap as we make it, that is the space between it and the wall is so wide, that it is impossible for any film to be placed upon the side walls of the retaining chamber. The record will probably show that this is two inches thick, that is this space [53] around here is two inches between the edge of this cone or the edge of this baffle-plate or deflector, and the wall receivable into which this oil is pitched. We will contend that it is not a thin film in any sense of the word, is not even a thin body of oil compared with the size of the trap itself, and certainly not a film of oil. Our contention will be as stated before, that he is confined entirely, by reason of the state of the arc to the thin film of oil which means practically no body to it at all, no thickness. Now then, our further contention will be that this baffle-plate is nothing more than—serves no other purpose than to divert the oil to the side wall in order to prevent the stirring up of the body of the oil as it settles in the deflecting chamber. For instance, our contention will be that if this oil coming in here with the force that it does from a great many oil wells, or even from a pump, coming in here and allowed to

shoot right down into this body of oil that is down here (indicating), would keep it so thoroughly stirred up that it would get no chance to settle, would just keep a stirring up process all the time and would keep that in such a shape that it would be impossible for the gas to come off from it or for the oil and water and sand to separate. It would just keep it stirred up and it would accomplish no purpose whatever; that the only purpose of this is simply like we have learned in drawing out soda-pop out of a bottle—of course we couldn't make any other illustration in the days of Volstead, these days—but you will notice that we as children learned that when we pour out soda-pop out of a bottle, when it foamed up the proper way to do to keep too much foam from coming on it, was to let it come out of the bottle and strike against the wall of the glass and then keep it from being stirred up. Now, that is our contention that this foam and stuff coming out from the oil with great force, if allowed to shoot right down into this body would keep it so thoroughly stirred up that it would never separate. Now those are our contentions.

The COURT.—I understand you to say, then, that the deflection of the oil on to the wall does not operate as an element in separating [54] the gas from the oil?

Mr. BAGG.—It operates in this way, that it keeps —no, it doesn't have anything to do with the separation of the oil from the gas. It simply prevents this oil—if it would shoot right down from here (indicating), keeping this body stirred up so that it

wouldn't give an opportunity to stir up and separate the sand and water and oil and gas; it would simply keep it stirred up.

The COURT.—I understand you claim that that element that causes the oil to run close to the side of the chamber is not useful as an element in separating the gas from the oil?

Mr. BAGG.—We don't know; we are not prepared to say what effect it has if put in a very thin film like he has described it. We say we don't put any thin film on the side walls respectively. We just simply have a diverting process, and as a matter of fact if your Honor please, you will notice here according to their own description this tube here is split (indicating); then the oil coming out here would shoot over to this side and would shoot over to this side and wouldn't spread over here at all (indicating); it would just simply shoot. The only purpose of this whole thing is to spread this out so that it will not plunge right down into that body of oil in our case and keep it stirred up—simply a deflector just simply to change the direction of the oil as it comes in.

The COURT.—Now, you may proceed with your testimony.

Mr. BAGG.—If your Honor please, just a moment. Oh, yes, and another thing: Our contention will be that our oil simply comes down there in a more of a floating form, while theirs comes down with force. Our contention will also further be that in none of these traps in which we have this deflecting means is there any means for obtaining a

pressure. Our testimony will further show that we have no pressure in our trap at all unless perhaps it might be back pressure resulting from some stoppage or restriction of the passage at the point where it is being used. Possibly, for instance, we are using it in the boiler, under a boiler; when the gas is being thrown into the boiler, it is restricted; the passage of course; that would necessarily throw a little back [55] pressure on his gas line and might cause a little pressure in there, but it would be very little. The testimony will show that practically none of the gauges—we have a gauge on our gas traps—show practically no pressure in our trap at all, that is in the one on which this deflector is has no pressure at all on it and that the gauge so shows. Our contention will further be that on the Trumble trap, in order to accomplish the purpose that he sets out it is absolutely necessary for him to maintain a pressure in there because his whole theory of the trap is based upon the fact that the oil comes down here and spreads out over the walls of this expansion chamber as he calls it; that there is a pressure put upon the outside which has a tendency to squeeze that gas and press that gas and oil—or gasoline, lighter hydrocarbons into the oil so that the gas as it comes out is not impregnated with the gasoline and what we call dry gas. Now, it is absolutely essential, our contention will be, for his trap to operate at all to have this pressure in it, and that is why he insists in all of his claims in having a gas pressure maintaining means which as he shows here in his—well, he showed it in his illus-

tration what would correspond to the valve of an engine, that is in the gas line, a means by which when the pressure gets too great it closes or opens as the case might be and allows the gas to go out unrestricted; but he must have a restriction in his gas outlet line in order to produce and maintain a pressure on the inside of his trap against this flowing thin film of oil. Now, of course, a large portion of this will be brought out when we introduce the file-wrapper showing the history of his patent as it came through the office.

The COURT.—You may proceed, Mr. Lyon.

Mr. LYON.—Plaintiff offers in evidence the patent in suit 1,269,134 and asks that the same be marked Plaintiff's Exhibit 1. I think we had better use a numeral. We offer in evidence as Plaintiff's Exhibit 2 the filing-wrapper and contents of the Trumble application upon which exhibit 1 was issued. We offer in evidence under the admission and stipulation of counsel for defendant [56] made in open court this morning, copies of the Lorraine patent, 1373664, dated April 5, 1921, as Plaintiff's Exhibit 3; and as Plaintiff's Exhibit 4, a copy of the reissued letters patent No. 15220, dated November 8, 1921, as issued to Mr. Lorraine.

Mr. BAGG.—I think, if your Honor please, that hasn't been certified, has it?

Mr. LYON.—It is a printed copy. Well then, suppose, we don't bother the Court by putting in certified copies?

Mr. BAGG.—No, that is not necessary. That is all right.

Mr. LYON.—Now, will counsel for the defendant admit notice and demand from the plaintiff that defendant was infringing prior to the commencement of suit?

Mr. BAGG.—I think we deny that in the answer.

Mr. LYON.—Or will they admit that each one of the Trumble traps that were manufactured and sold by the plaintiffs bore the name of the Trumble Company's trap and the words "Patented June 11, 1918"? I ask these questions in order to possibly save formal proof.

Mr. BAGG.—All right, we will admit that.

Mr. LYON.—You will admit the notice and the markings?

Mr. BAGG.—Yes.

The COURT.—That is prior to what date?

Mr. LYON.—That is prior to the commencement of the suit, and the marking has been with the plate. We will just offer this plate in evidence as Plaintiff's Exhibit 5, and it shows the date "Patented June 11, 1918," and all the devices manufactured by the plaintiffs under the patent in suit have been so marked since the issuance of the patent. That is the stipulation. Mr. Paine, will you take the stand, please. [57]

Testimony of Paule Paine, for Plaintiffs.

PAULE PAINÉ, a witness called on behalf of the plaintiffs, being first duly sworn, testified as follows:

Direct Examination.

(By Mr. LYON.)

Q. Please state your name, age, residence, occupation.

A. Paul Paine; aged 40; residence, 607 Parkview Avenue, Los Angeles; controlling engineer.

Q. Are you connected with any oil companies at the present time?

A. I am not in the executive organization of any oil companies. I am a director in the Union Oil Company of California.

Q. And of what school are you a graduate, Mr. Paine?

A. I graduated—I have my training in, and in 1905 graduated from the Massachusetts Institution of Technology, more commonly called the “Boston Tech.”

Q. As an engineer? A. As an engineer.

Q. After leaving that school did you have any connection whatever with the oil business?

A. I came west immediately and was in mining work for several years, and in 1909 entered the oil fields in the Midway field of California near Taft. I was engineer of the Honolulu Consolidated Oil Company. In 1911 I became assistant superintendent and in 1914 was made superintendent in charge

(Testimony of Paule Paine.)

of all the field operations for that company. The company was in the business of producing—of drilling oil wells, producing oil, producing gas, the sale of gas and the erection and operation of gasoline plants for the recovery of gasoline from the natural gas. In 1917 I left there and took charge of the operating departments in Oklahoma and Kansas of the Gulf Oil Corporation. In 1920 I entered business for myself as an independent engineer and have been occupied in that direction since then except for a nominal period when I was in the active organization of the Union Oil Company of California.

Q. Did you ever having anything whatever to do with the Trumble gas trap manufactured by the plaintiffs? [58]

A. Yes, I installed those on the property of the Honolulu Consolidated Oil Company. We were in the gas business, and at that time were supplying the major portion of the natural gas supply which came to Los Angeles.

Q. Approximately when did you install the first one of those Trumble gas traps?

A. In the latter part of February, 1915.

Q. Well, will you briefly describe that trap as installed at that time?

A. I had noted the operation of this trap on an adjoining property, and we had a well to which I considered it could be applied advantageously. This well was Well No. 3. Do you wish that detail?

Q. Yes.

(Testimony of Paule Paine.)

A. Well, Well No. 3 of the Honolulu Company on Section 10, township 32-24. This well was completed as a flowing oil well in August, 1914, and up to that time had been flowing this oil and gas out into an ordinary receiving tank, the oil being collected and moved from there to a shipping tank and the gas escaped into the atmosphere, and that was *was* entirely lost.

It was highly desirable to us that the gas be saved because we had several different uses for it, and these used obtained at different pressures. So this trap was installed at that well which was at that time flowing through a flow plug. The pipe-line which comes from a well in many instances has inserted in it a restricted opening, which is a solid piece of pipe of length from 6 inches to 12 inches with a small opening drilled through it—the opening in this case was five-eighths of an inch. The purpose of that is to restrict the flow of the well and to prevent it from flowing actively as it might. The reason for it being that we found that when the wells were wide open and flowed so vigorously they tended to bring in sand at the bottom of the well and stop the well altogether through this accumulation of sand at the bottom of the well. It had therefore become quite common to insert these flow plugs into the line. The effect of this flow plug, in addition to [59] maintaining probably a smaller initial production but a longer period of flow, was also to increase the pressure on the casing in the well through the fact that it backed up the pressure as

(Testimony of Paule Paine.)

we call it. After passing through this flow plug the oil and gas were conducted into a Trumble trap. The gas outlet was brought out to a near-by point and the gas permitted to escape in the atmosphere in the beginning. The oil outlet was extended to a receiving tank. The receiving end comprised two tanks each with a capacity of 5,000 barrels.

Q. What was the object at first in allowing the gas to escape into the atmosphere with that trap?

A. We were undecided at that time as to what effect upon the flow of the well the maintaining of the pressure on the trap might have. Obviously if the gas and oil outlets from the trap were closed everything would remain quiet and the well would not produce any oil or gas. Now, if it is allowed to flow wide open the effect as far as pressure is concerned would be practically the same as if it were going to a tank, and if the pressure on the trap were increased we were not entirely sure as to what the effect would be, therefore, the trap was allowed to operate in that manner for a period of a number of days, I don't recall how many. It was then decided that we would endeavor to save that gas and apply it to some beneficial use. The operating conditions on the property at that time were as follows: The fuel system of gas for the property operation operates under a pressure of from 20 to 40 or 50 pounds. If that gas could be saved at that pressure it could then be utilized for fuel purposes. If gas could be saved at a pressure of 75 pounds the gas could be delivered into the mains of the Midway

(Testimony of Paule Paine.)

Gas Company which was the company that obtained gas at Taft and brought it to Los Angeles for distribution in Los Angeles, and this vicinity. If the gas could be saved at a pressure of 175 pounds that gas could then be sold to the Southern California Gas Company, which was a local gas company engaged in the collection and distribution of natural [60] gas in Kern County. The price obtained in either case would have been 5 cents per 1,000 cubic feet, but because of contractual conditions with those two concerns it was desirable on our part that we save this gas at the higher pressure, if possible. The procedure was then started with the trap of allowing it to operate at these different pressure conditions. It was first allowed to operate with no pressure at all against the gas outlet. The gas escaped into the atmosphere. This continued for a three-day period. The reason for three days was that the well was producing about 1,200 barrels per day, and that provided about 3,600 barrels to this 5,000 barrel tank. At that time the oil was switched over into the second tank and the first tank of oil delivered to the Standard Oil Company. A valve on the gas outlet of the tank was then closed down slightly until the pressure on the inside of the Trumble trap registered, by means of a gauge attached to it, a pressure of 34 pounds. That was accomplished by just pinching the gas valve until it restricted the flow of gas sufficient to allow the gas to back up in the trap. We operated in that manner for a three-day period. Then when the

(Testimony of Paule Paine.)

tanks were switched the valve was closed down still further until the pressure held was 75 pounds. This continued for three days and the valve was closed down still further and the pressure of 177 pounds held upon the trap. No higher pressure was placed on the trap because there was no advantage to be gained by endeavoring to save the gas at a still higher pressure. During each of these three-day periods a number of observations were made of the volume of gas escaping, the quality of the oil which was obtained from the trap, the character of the gas which was escaping and the net loss. Observations were made on each day and then at the end of each period the average of these observations was ascertained so that we had those four periods of observations with no pressure on the gas outlet, with 34 pounds pressure, with 74 pounds pressure and with 177 pounds pressure.

Q. What was the gas pressure on the well itself?

A. At the beginning of the test the pressure was 380 pounds to the square inch, that is the pressure at the top of the casing [61] before the fluid passed through the flow plug. The oil was sold from the property under a contract providing for a graded payment dependent upon the quality of the oil. The quality of oil is registered in oil fields practice *ay* its gravity. The method of recording that is not in terms of specific gravity, but it is expressed in gravity baume as it is called. The weight of a fluid of 10 degrees gravity oil is the weight of water. As the fluids become lighter

(Testimony of Paule Paine.)

the gravity is expressed in higher terms of gravity baume. Thus 20 gravity oil is lighter than 15 gravity oil; 30 gravity oil is still lighter, and while the gravity of the oil is only a general index of its quality it is the expression customarily used in the oil field to register its value because the lighter oils, that is the oils of higher grade, as expressed in the Baume scale, usually contain the larger proportions of gasoline, and the lighter factors which have the greater value in commercial markets. So the price paid for this oil varied with its gravity. The higher the gravity the more money obtained for it. Now the oil ran from the tank to the Standard Oil Company. When the trap was operating with the gas escaping into the atmosphere it returned as having a gravity of 29.3 degrees. These determinations of the gravity of oil in the tank were not made by us, but were determined by the gauger of the Standard Oil Company who sampled the tanks and test the oil to ascertain its quality. We found that as we raised the pressure on the trap there was an increase in the gravity of the oil and accordingly in its quality. At 35 pounds pressure the gravity of the oil as delivered to the Standard Oil Company had increased from 29.3 to 30.9; at 74 pounds pressure the gravity of the oil had increased to 31.2. It so happened that at that time one price was effective for all from 29 gravity up to 31; and an increased price of 5 cents per barrel was effective for 31 and better. The application of this pressure therefore

(Testimony of Paule Paine.)

resulted in an increased value to the oil of 5 cents per barrel or approximately \$60 per day. Now when the pressure was increased to 177 pounds it was found that, while the oil apparently had a still higher gravity when it went into the [62] shipping tank, that it didn't retain that still higher gravity but was 31.1 gravity when its quality was ascertained by the Standard Oil gauger. So much for the quality by increasing the pressure maintained in the trap.

Q. Well, why was this increased to 177 pounds and the increased gravity not fixed? When that oil was sold why did it drop back by the Standard Oil gauge?

A. Well, that will of course call for a conclusion on my part. The reason I will give for that will be this: That at the higher pressure, still higher pressure maintained upon that well certain gases were retained in the oil which went into the solution in the oil. Now, these gasses were always gasses. They were not gasoline vapors that had been retained in the oil in virtue of maintaining this higher pressure on the trap, and those gasses which are fixed gasses and are incondensable under the ordinary agreement of pressure or temperature, escaped from the oil in the shipping tank, and it is altogether possible—I observed it on occasion—that the escaping of those gasses carried along with them small quantities of gasoline vapor, so that I have had instances, similar instances where, through the maintaining of an unduly high pres-

(Testimony of Paule Paine.)

sure we arrived at quality of oil which was lower than that which would be obtained in a pressure range of from 75 to 100 pounds held on the trap.

Q. Now, proceed, Mr. Paine.

A. A collateral line of observations was made upon the quality of the gas escaping and upon its quantity. The quantity registered just about a million cubic feet per day. The weight of the gas was observed. The weight of gas is registered in specific gravity with reference to air as a unit, with the weight of the air at 1. The weight of gas is usually lighter of course and has smaller percentages which represent its weight as compared with air. The specific gravity of this gas with no pressure held upon the trap was .83. The gas at that time was escaping in a dense white cloud caused by the mist resulting from the gasoline vapors. At 36 pounds held on the trap the specific gravity of the gas declined to .79. At 74 pounds held on the trap the specific [63] gravity of the gas was .75 and 177 pounds held upon the trap the gravity of the gas was .70 resulting in a total decrease in the weight of the gas from .83 to .70. A further result of the installation of the trap was found to be an actual increase in the production from the well which was saved and sold. That was due to the large production of the well.

The COURT.—That was the gas that you saved and sold? A. No, sir; the oil.

Q. The oil?

(Testimony of Paule Paine.)

A. Yes, sir; due to the large production of the well, around 1200 barrels per day. It was impossible to ascertain exactly how many barrels were produced from it in every 24 hours due to difficulties of gauging and the fact that it would never be gauged at exactly the same time, and the further fact that wells frequently make a greater rate of flow at one time than they do at another. But the daily average production of the well had been observed over a long period, that is from August up until March, at that time. The well was of course declining in its rate of flow. It had by that time reached a very settled rate of decline, which was shown diagrammatically, so that it was expected that during the ensuing months a certain production would be obtained from it, and it was found that the actual production from the well during that ensuing month was about 40 barrels per day in excess of that which had been expected. Following that month the rate of decline continued along the same rate as had obtained prior to the installation of the trap.

Mr. LYON.—You mean with the 40 barrel increase?

A. With the 40 barrel increase, as noted.

Q. Well, this 40 barrel increase then was what kind of a saving: was it gasoline vapor or what?

A. It must have been a saving of the gasoline vapors, because the gasoline vapors under these higher pressures, the dense white cloud at 36 pounds; the dense white cloud was not nearly as

(Testimony of Paule Paine.)

cloudy but it was still cloudy; at 74 pounds it had practically all disappeared, and at 177 pounds the color was all gone from the [64] gas and it was entirely colorless. These gasoline vapors had been prevented from escaping from the trap then with the gas and had been recondensed with the oil. As far as practical a check was made of that through ascertaining the difference in the weight of the gas at a specific gravity of .83 as compared with the same volume of gas at a specific gravity of .70 and the difference in weight of that gas was just about the weight of 40 barrels of gasoline of a gravity Baume, ranging from 70 to 75 which is the character of gasoline one would expect to be recondensed, or something on that order of magnitude. A further check could be provided, although the practical operations were not carried along with great enough degree of certitude to permit it to determine the kind of gasoline which would be necessary to raise 1200 barrels of oil of 29.3 degrees Baume gravity to a gravity of 31.1 degree. And it was in the same range. The ultimate effect therefore of the trap was first to conserve and utilize about one million feet per day of gas worth \$50 per day, an increase in the value of the oil of about \$60 per day, and an increase in actual oil saved from the well of about 40 barrels per day having a value of, at that time, of about \$15 per day.

Q. Before passing from this general subject of the oil pressure, now why is it, Mr. Paine, that

(Testimony of Paule Paine.)

the gas may be readily separated from the oil as it is discharged through the flow plug of a well and yet not as readily separated, and I mean the gasoline vapor, in particular, from the natural gas if the gas and gasoline vapor are allowed to mix and then afterwards attempt to separate it?

A. That is due to a rather deep question of physics that has come into importance in connection with the manufacturing or increasing of gasoline from natural gas, the principle of "partial pressures" as it is called, which is this: If there are some vapors of gasoline in a gaseous state in gas and these vapors are there in a comparatively small proportion, such vapors if alone and not mixed with other gasses may condense at comparatively low pressure. One can have a gas for instance which is a gas vapor which is condensable at 10 pounds pressure if applied to it. Now, [65] if that gas is mixed with other gasses which are practically noncondensable in proportion of 5 per cent, say a 10 pound or 20 pound pressure then applied to the gas will not condense those vapors, but the pressure must be according to increase in the ratio of this dilution. If it were present there at 5 per cent then the pressure would have to be increased twenty times that which was required to condense it when it is alone and not intermingled with these noncondensable gasses. Now, if these gas vapors escape from the oil along with the gas they can then be carried along to a plant and compressed to a high pressure and cooled sufficiently to re-

(Testimony of Paule Paine.)

condense them. Then after they are once recon-densed and separated from the other gas they can be obtained in a liquid state by the application of a comparatively low pressure, and that is a principle which applies to the preventative side of preventing the escape of gasoline vapors along with the gas; after they once escape into the other gas which is not condensable the separation and the saving of them is much more difficult and *expense*.

Q. Now, you have referred to the use on this Honolulu well in 1915 of a Trumble gas trap. Please identify that by its construction and mode of operation, if you can.

A. It was a cylindrical body that was—that had a conical shape at the bottom. It had an opening in the top through which the gas and oil gained access to the trap. That opening was, I think 6 inches in diameter or 8 inches in diameter. In the center of that opening was a smaller size of pipe which was the gas outlet. The oil and the gas from the well passed down inside of the larger sized pipe between the gas outlet pipe and this larger pipe into the body of the trap. Inside of the trap were some cones, either one or more, I don't know, cone-shaped bodies of metal over which the oil and the gas spread out, behaved like an umbrella. The oil then passed to the bottom of the trap. The gas came around up inside of the umbrella. The umbrella was extended from the bottom of this small pipe that came in at the top

(Testimony of Paule Paine.)

of the trap and through which the gas passes. On the side of the trap was an oil outlet, together with a valve and a control device attached to a float [66] inside of the trap by means of which the fluid level was maintained at practically the same point, so that no matter whether the well made larger quantities of oil at one time than at another, the fluid remained at about the same level. At the bottom of the trap was another opening through which any sand or water accumulated could be drawn off. At another point on the side of the trap was a water gauge glass for showing the height of the fluid in the trap.

Q. Then if I understand you correctly, in general construction and mode of operation the device is like that of Plaintiff's Exhibit 1, the Trumbel patent in suit.

A. It didn't have this side opening which comes out to the side and goes up to the top (indicating).

The COURT.—Which opening is that?

A. This here (indicating). That was absolutely, entirely off. It was not on the trap.

Q. Well, what is the purpose of this side opening?

A. I have never used a trap with that on there.

Mr. LYON.—Otherwise was it practically the same as in this drawing?

A. It had only one side outlet. This drawing shows two. It had only one side outlet through which the oil escaped.

(Testimony of Paule Paine.)

Mr. BAGG.—You don't know whether that No. 12 is the same?

A. Well, I infer that it was No. 12 because No. 12 shows a control valve on the inside whereas on this trap the control valve was on the outside.

Q. On the trap that you had?

A. Yes, on the trap which I always used at that time.

Q. There was not any inside?

A. There was none inside, no.

Q. But so far as the inlet of the oil and gas from the well and the umbrella cone, and so forth—

A. And the oil outlet, the gas outlet passing up through the trap and the outlet at the bottom, it was there.

Q. And where was the float for the valve in the Trumble trap that you had on in 1915 for the Honolulu Oil Company? [67]

A. It floated on the surface of the fluid level.

Q. Inside of the trap?

A. Inside of the trap, and was connected through a stuffing box to a lever on the outside of the trap, which actuated on an oil discharge valve situated on the outside of the trap on the oil discharge line.

Q. Subsequently to this administration and use of this first Trumble trap on the Honolulu Oil well in 1915, I believe you said February or March—

A. Yes, the latter part of February, second half of February, 1915.

Q. Did you thereafter use any more Trumble gas traps or know of any other person using them?

(Testimony of Paule Paine.)

A. Yes, we used a good many of them. We were completing quite a few nice wells at that time and it became our standard practice to put a Trumble trap on the well and to carry on a similar line of investigation, because it was found that no two wells behaved exactly alike, with respect to the back pressure that might be backed up against them and their behavior. Of course the prime object was to save the oil and then save the gas if we could, and wherever possible to save the gas at as high a pressure as possible because that eliminated the expense of later on recompressing the gas so that it could be carried to a market, and of course I observed the operation of these traps on a number of other properties in the Midway field.

Q. I notice from your testimony that evidently you found the greater saving of gasoline vapors in this Honolulu well in the range of pressures below and up to 34 pounds, is that correct?

A. We found in that case 36 pounds happened to be the point where we stopped; we found in general that the greater, by far the large bulk of gasoline saving was effective in the range up to about 25 pounds and that the additional saving of gasoline that would obtain from the higher pressures was very much smaller.

Q. Did you ever have any experience in equipping any other [68] wells with these Trumble gas traps, or assist in the operation of them?

A. Oh, I would assist operators sometimes when they were putting them in. It was a new thing

(Testimony of Paule Paine.)

at that time and we happened to have had some experience. In the North Midway field they developed some trouble with emulsion due to water coming along with the oil. When water occurs with the oil it may, especially in the pressure of gas, churn up into an emulsion of oil and water which is very difficult to handle and ordinarily will not be accepted by the producing agents. One property of the Maize Oil Company on section 28, I think it was 28, was a well that was flowing about 18 or 20 per cent of emulsion. We had had 82 per cent of clean oil and the balance was this emulsion of water and oil flowing through a flow plug, and I suggested to them that they put a trap on there in order to save the gas and reduce the proportion of emulsion that they had had thereby maintaining a pressure on the trap. The effect of it was to reduce that proportion of emulsion down to about 3 per cent.

Q. You say "trap," what kind of a trap?

A. Trumble trap.

Q. And how was it that the use of the Trumble trap on that reduced that emulsion?

A. Probably the effect of that is that through maintaining the pressure on the trap the rate of the flow of the oil and gas as they pass through the flow plug is reduced, the velocity is reduced and the churning effect of the flow plug is accordingly reduced.

Q. Now, you refer to the building up of pressure within the Trumble gas trap by putting the valve

(Testimony of Paule Paine.)

on the gas outlet of the trap. What is it that builds up the pressure?

A. Why, the closing of the valve increases the friction factor of the gas passing through that opening to such an extent that the gas will not pass through as readily, and that backs up the gas in the trap until a pressure in the trap is reached [69] sufficiently high to force the quantity of gas coming through the well through that restricted opening.

Q. Then it finally comes down to a question of what is the pressure of the gas in the well; in other words, you must have pressure of gas in a well before you can get a pressure built up in the trap, must you not?

A. Oh, yes, if there is no gas. If production is coming from the well there must be a pressure to push it in there before one can build up a pressure in the trap.

Q. To your knowledge to what extent have these Trumble gas traps come into use since 1915?

A. Well, I don't know exactly the extent. They were widely used in the Midway field at that time and have been since then. Last week I observed traps in operation up there that I installed in 1915, and of course I have seen them operating in the mid-continent country, Texas and Oklahoma.

Q. You have no connection with the Trumble Gas Trap Company. A. None whatever.

Q. You have repeated from memory a number of figures in regard to tests that were made in this

(Testimony of Paule Paine.)

Honolulu Consolidated Oil Company's well in 1915. Have you any memorandum from which you can refresh your recollection on that?

A. I have a memorandum that I made at that time on a piece of tracing paper in order that I could take off blue-prints and give them to different people that were interested in it.

Q. Have you that tracing? A. Yes.

Q. If you have a blue-print from it please produce the blue-print along with it.

A. Well, I think I have a blue-print. I have got about everything else. Yes, that is it (producing paper).

Q. And this tracing that you have produced was made by you at the time? A. At that time, yes.

Q. And this blue-print is a true blue-print from it? [70] A. Yes.

Mr. LYON.—We offer the blue-print in evidence as Plaintiff's Exhibit 6. I don't think counsel will object to the blue-print.

Mr. BAGG.—No. I would just like to see it.

Mr. LYON.—We will give you a chance, and if there are any errors they will be corrected to correspond. You may cross-examine.

The COURT.—In obtaining the pressure inside of the tank that pressure comes from the pressure of the gas from the well, does it? A. Yes, sir.

Q. You maintain that by simply shutting off the pressure?

A. Yes, sir; closing down the valve part way.

The COURT.—Very well, go ahead.

(Testimony of Paule Paine.)

Cross-examination.

(By Mr. BAGG.)

Q. How long did you say you had been in what we know as the "oil game"?

A. Since 1909.

Q. Since 1909? A. Yes.

Q. You had seen prior to 1915 a number of other oil and gas separators besides the Trumble trap, hadn't you? A. Yes.

Q. As a matter of fact there were a large number on the market at that time, weren't they?

A. I knew of only one being marketed at that time.

Q. What one was that?

A. That was the McLaughlin trap.

Q. The McLaughlin trap?

A. The Stark trap was being made and used at that time, but they consisted substantially of a group of pipe fittings and nothing more at that time and it was not being marketed.

Q. Where was it you saw this Stark trap? [71]

A. On Section 36.

Q. On some well up there?

A. Yes, in the Midway field.

Q. In the Midway field? A. Yes.

Q. And the McLaughlin?

A. In the same district.

Q. How many of those McLaughlin traps did you say you had seen?

A. Well, I don't know, but there were quite a few of them in operation. They were the standard

(Testimony of Paule Paine.)

trap used on the properties of the Southern Pacific Company and were in use on some other properties as well.

Q. Well, in your study of the oil and the properties of oil and gas and the operation of oil and gas wells, you discovered that there were quite a number of devices some of them abandoned and some of them which were used for the purpose of separating the oil and the gas as it came from the well, did you not?

A. Well now, the only work I had done at that time was in the Midway field in California, and my knowledge didn't extend beyond the conditions there. In 1914 I moved over to the headquarters of the Honolulu Company and my work before that had been at the outlying properties where we were not confronted with the problem of high pressure gas, and that was my introduction to that problem.

Q. Well, you never had then any experience in oil fields outside of California?

A. Not at that time.

Q. Subsequently, however, you had?

A. Yes.

Q. You have been interested, I believe, in some oil fields down in Oklahoma? A. Oh, yes.

Q. Now, can you explain to the Court what the philosophy of these oil and gas traps is, why they operate?

Mr. LYON.—We object to that question as to the

(Testimony of Paule Paine.)

form. He [72] says "these gas traps." You mean the Trumble gas trap?

Mr. BAGG.—I am asking about all the gas traps he is familiar with. He has testified with reference to two that he knows and has seen.

The COURT.—I would suggest that he explain the Trumble trap first and then go to the others, because I would like to get the actual point in view first.

Mr. BAGG.—Very well, your Honor.

Q. Will you state to the Court, or explain to the Court if you can the philosophy or the principle which underlies the operation of the Trumble trap, in other words what makes it separate oil and gas?

A. For a consideration of the fundamental principles I would suggest that we dismiss from our mind this collateral device here which is not essential (indicating).

Q. Yes.

A. This portion (indicating). Now, the oil and gas from a well are flowing with a pressure, in other words if the valve at the top of the well were to be closed it would show a pressure on the pressure gauge. Of course the pressure declines and is smaller at times than it is at others, but the well flows in virtue of a pressure; it passes, in the Trumble trap through this pipe line down through these openings shown at the top of the trap between the large pipe and the small pipe.

The COURT.—There are two pipes there, this pipe here and this inside (indicating)?

(Testimony of Paule Paine.)

A. Yes, sir; there is a larger pipe which we may assume to be 6 inches in diameter, and then inside of that is a smaller pipe that fits at the top here at No. 26 made tight so that the gas and oil will just go up into this small area above where the gas and oil come in. The oil and *has* gain outlet at No. 7 but pass through this opening and down through the space between the 6 inch and 2-inch pipe. It spreads out in this space at the top of the Trumble trap over this umbrella or cone-shaped piece of metal. The oil and gas comes down in the body of the trap. The [73] gas being lighter is separated from the oil in the body as it flows down over the umbrella and probably also separates, in minor degree, from the body of the oil as it has accumulated, passes upwards and out through the two-inch pipe which is situated inside of the 6-inch pipe, through the gas outlet shown as No. 10 and on to wherever the gas is to be used or into the atmosphere if it is to be wasted.

Q. Well, do you store that gas?

A. To a very limited degree. Natural gas is used in such large quantities that any storage in holders would not be commercially feasible. We must use pretty quick, must use it to-day or it is gone forever. Now, the oil accumulated in the bottom of the trap and is withdrawn through an outlet. As I say, this is not the type, this drawing does not describe exactly the type of trap which was in use at that time, but is essentially similar except that the controlling outlet valve here is situated on

(Testimony of Paule Paine.)

the inside of the trap instead of the outside of the trap. The oil passes out of this opening. Now, wells surge at times, at times they may cease producing altogether for a period of a few weeks or a few hours and then surge up and make a violent flow. The result of such violent flow would be to raise the level of the oil in the trap. That brings about the function of the controlling outlet valve which by means of a float is regulated in the size of aperture through which the oil passes. As the fluid level rises, the fluid passes up and the float effects an opening in that outlet valve which lets more oil go through. That is cut down and it lessens and lessens until it reaches a certain level where it doesn't flow. The sand and water by reason of their greater weight settles to the bottom of the trap and may be withdrawn through an outlet at that point.

Q. Does the oil go down on the side of the tank in the operation?

A. I think—this is entirely conjecture, I have never been inside of one when it was performing—I think the oil flows down both on the inside of the shell of the tank and if this piece is sufficiently far back from the well (indicating), it may stop [74] and churn up the oil, but if this corrugation is directly up to the side on the inside of the shell of the trap my conclusion is that the oil in a large measure passes down as a film or small body of oil on the inside of the trap—that is what would be desirable to my mind rather than to drop the oil here into the body of the tank.

(Testimony of Paule Paine.)

Q. The object of the large tank is to give space so that the gas will be released from the oil as though you put it down in the open atmosphere?

A. To provide an opportunity for the gas to separate from the oil. Now the gas which is in oil, that is in large bulks, scattered throughout a large bulk of oil, very similar to these very large storage tanks, the gas takes quite a long time to escape from that oil altogether, because some of it is in the bottom of the body of the oil and it must gradually raise and it raises sometimes very slowly.

Mr. LYON.—The thinner the body of oil the quicker the gas gets out?

A. The more rapid is going to be its passage to the surface of the oil from which point it disassociates itself from the oil.

Mr. BAGG.—Well then, as a matter of fact the operation of this Trumble trap is that it affords a large space in the flow of the oil and gas which enables, or produces a slowing down of the velocity of the oil and gas in their flow and enables the gas and oil to separate?

A. I will agree with you if you will say "area" instead of "space."

Q. Well, "area"? A. Yes.

The COURT.—Your idea is that the spreading of the oil causes the condition under which the gas may escape from the oil?

A. It expedites the separation of the gas from the oil through the greater areas, not necessarily through the greater [75] space.

(Testimony of Paule Paine.)

Mr. BAGG.—But as a matter of fact the principle upon which all gas and oil separators are based is the fact that it affords, by reason of its enlarged space, and area, an opportunity for the oil and gas coming from the well to slow down or retard its velocity and give the oil and gas time and opportunity to separate.

Mr. LYON.—Now, wait a moment. I object to the form of the question, your Honor, although I would like to have it answered.

Mr. BAGG.—At this time I will restrict it to this one trap. That is the philosophy of it, isn't it?

The WITNESS.—Now, let's have the question.

(Last question is read by the reporter.)

A. Well, the function of any gas trap of course is to separate the gas from the oil and it is advantageous to have it larger than the size of pipe that is carrying the oil and gas to the trap.

Q. And they are all built upon that principle of velocity reducing means which gives the oil an opportunity to particularly become quiescent and then the oil and the gas separate, one going to the bottom and the other to the top.

A. No, no. Quiescence necessarily doesn't help it, Mr. Bagg, for this reason: If you have gas and oil mixed together in a body, quiescence, the gas will not separate as readily from the oil as it will if you churn it up, stir it up; you will then agitate it bringing particles of gas nearer to the surface, constantly accelerating the separation of the gas from the oil; so, while it is more or less speculative,

(Testimony of Paule Paine.)

I would not infer that its being quiescent would necessarily help the separation, but frequently a diminution in the velocity will help.

Q. I mean it slows it down. I presume no one would contend that the oil in any of these oil and gas separators was absolutely quiescent, but the velocity of it has been slowed down considerable as compared with its velocity as it comes from the well?

A. I would rather have the oil more active for an effective separation. [76]

Q. Well then, why wouldn't the oil and gas separate then in a pipe as it comes from the oil and gas well, why wouldn't it separate then?

A. Oh, because your oil is intimately mixed with the gas, and at a point where the gas, in virtue of its physical action of coming off would bring along with it particles of oil.

Q. And then when you slow it down then it gives it an opportunity to separate one from the other?

A. Of course, if a trap were high enough, no matter how much it were being agitated in the bottom, if the gas outlet were sufficiently far above where the particles of oil are being taken along in the stream of gas, why there would be an effective separation, even though the oil were active.

Q. Well, now, suppose just as an illustration that you had connected with that oil and gas well that was flowing at a considerable pressure such as you describe at the Honolulu well in 1915, and suppose that that was connected with a pipe-line that

(Testimony of Paule Paine.)

will cover miles long and the oil and the gas came through that pipe line at the same rate of speed that it came out of the oil and gas well, would the oil and gas be separated at the end of its journey, at the end of this pipe?

A. Oh no, without this pressure it wouldn't be?

Q. It wouldn't be separated to any appreciable extent whatsoever? A. No.

Q. That would be caused by the fact that the velocity was such going through that pipe that it didn't give the oil and the gas an opportunity to quiet down long enough to separate?

A. They would remain intermittently mixed throughout their passage there.

Q. The operation of the separation of oil and gas is just practically the same thing as though you were to take a bucket of water and mingle a lot of sawdust in it stir it up very thoroughly; then as long as you keep stirring it the sawdust and the water would not separate to any appreciable extent, would it? [77]

A. No.

Q. But then you allow that to settle or stop just a few minutes to take up something else and the first thing you know the sawdust will come to the top and the water drop to the bottom, wouldn't it?

A. Yes, sir.

Q. Now that is the same principle that obtains in all oil and gas separators?

A. Of course the fundamental principle of any

(Testimony of Paule Paine.)

gas trap is a separation of these fluids in virtue of their respective weights.

Q. And the principle upon which they operate is the slowing down process which gives them an opportunity to do that, is that correct?

A. The slowing down process to a minor degree. I don't believe that that is solely responsible, although of course a large settling area or space is desirable, but I cannot accept the theory that quiescence alone expedites the separation of the gas from the oil.

Q. Well, of course it is dependent upon the relative specific gravities of the oil and the gas; that is a fundamental principle which permits them to separate. If they were the same specific gravity they wouldn't separate under any circumstances, but the flowing down process which gives them an opportunity we will say to catch their breath and the gas to come out and the oil to settle, is practically the philosophy and basis upon which all oil and gas separators are based, isn't it?

A. To a certain extent, yes.

The COURT.—It is now the noon hour, and the Court will take a recess until 2 o'clock. [78]

AFTERNOON SESSION—March 22, 1922, 2 P. M.

PAUL PAINÉ resumed the stand.

The COURT.—You may proceed. Is there any further cross-examination?

Mr. BAGG.—Yes, if your Honor please.

Q. Mr. Paine, in that trap, that was installed back there in 1915 on the Honolulu well, do you

(Testimony of Paule Paine.)

know how many cones there were in that trap?

A. I do not. I did not open it up.

Q. You don't know whether there were any cones in there at all or not?

A. Well, I say I didn't open it up—we didn't take the whole works apart, but there was on that trap a manhole that could be taken off, through which one could gain entrance to the trap, and I took that off because I desired to replace the composition gasket in there with a lead gasket that would resist this light gravity oil, and I looked up there and I saw a conical shaped affair, but I could only see the one, and whether there was more than one or not I don't know.

Q. Did you observe how near the wall the edge of this cone came?

A. I didn't measure it or reach up to that point. It came very close to the wall.

Q. Very close to the wall? A. Yes.

Q. What was the estimated amount of space between the edge of the cone and the side wall?

A. Oh, I wouldn't like to estimate it. From that distance in looking, my recollection it might have been a quarter of an inch or it might have been three-quarters of an inch, but something of that degree.

Q. It was very close. Now, in the operation of that trap the pressure that you speak of came originally from the well, did [79] it not?

A. It is the pressure of the gas contained in the well that came along with the oil.

(Testimony of Paule Paine.)

Q. And that build up the pressure in the separator? A. Oh, yes.

The COURT.—Was there anything in the separator itself to measure this pressure?

A. No, sir, not inside of the trap.

Mr. BAGG.—Now, the pressure then in the trap came in at the upper portion with the oil and gas that came from the well?

A. No, pressure is not a definite thing that can come in; pressure is a condition, not a thing.

Q. Well, originally it started at the top; now for instance when the trap was first built up, when you first turned oil into it the pressure originally came in at the top, did it not, and then of course pressed down through the—

A. Possibly this will give you what you want: The fluid that was under pressure came in at the top of the trap.

Q. Well, that is about what we want. Now then the tendency of the pressure originally was downward, wouldn't it be on that flowing film of oil?

A. No, the tendency of the pressure in every case, Mr. Bagg, is in all directions.

Q. Yes, I understand that, but originally when you first started the pressure it would be on the top of the flowing film, or it would be above this film of oil as it flowed out of the top of this cone, wouldn't it?

A. No, the pressure as it exists in a container is equal at all points.

Q. Well, I understand, but then there was a

(Testimony of Paule Paine.)

pressure on the top of this film of oil anyway, wasn't there?

A. Yes, as there was all over the trap.

Q. Yes. And then it had a tendency to press that oil against the surface of that cone, didn't it?

A. Well, I wouldn't ascribe that to pressure, no.

[80]

Q. Well, what would it be? A. Gravity.

Q. Simply the gravity. That was all there was on the oil surface of this cone, simply the gravity?

A. The oil fell on to the cone and moved down over it.

Q. Yes.

The COURT.—Well, did that release the pressure immediately when it entered the cone?

A. When it entered the trap?

Q. Yes. You would call this trap (indicating).

A. Yes, the whole trap.

Q. The whole thing. When it went in here did it release the pressure so that it wouldn't—

A. If the outlet were open, if the outlet to the trap were open it would reduce the pressure, yes, the gas outlet; it would vent it.

Mr. BAGG.—But there would be a pressure along here on top of this oil which would have a tendency to squeeze this oil in here, wouldn't it (indicating), squeeze it against the surface of this cone; it would have a squeezing effect, wouldn't it?

A. Well, the pressure would be exerted against every surface exposed there.

(Testimony of Paule Paine.)

Q. Yes, but it would be against the oil, having a tendency to press down toward this—

A. That tendency might be there.

Q. And it would be likewise the same, having a tendency to press this oil. Now, where would the pressure be on this side (indicating); where would the pressure be changed to?

A. Well, of course the pressure would be the same on the other side of this cone as it is against the oil.

Q. Yes, it would be underneath around here and up on the outside of this oil, wouldn't it?

A. The pressure, understand, must be the same at every point in this trap.

Q. So then when this oil came down here, flowed down this edge here, then the pressure would be behind it as well as on this [81] side of it, wouldn't it (indicating); the pressure would be along here (indicating); this is the film?

A. The pressure was there.

Q. The pressure was there. It would be on both sides of this film of oil, wouldn't it?

A. Now, what do you mean by "this film of oil"?

Q. Well, this film of oil, say, oil is coming in here now and flows down over this cone, strikes the edge of the cone drops down and starts to flow down the side wall of this receptacle. Now then, the pressure would be on the outside and on the inside, too, wouldn't it? A. Of what?

Q. Of this film of oil?

(Testimony of Paule Paine.)

A. Oh no, not if the film of oil is bearing tightly against the side of the iron.

Q. Well, wouldn't there be any pressure on the oil then at all?

A. It would be in the interior of the trap.

Q. It would be on the inside pressing toward this and having a tendency to push out then, wouldn't it?

A. Yes, the pressure is vertical in the trap.

Q. Well, it would have a tendency to push this oil this way, wouldn't it, out, in other words?

A. Yes, of course.

Q. If you were to take the side wall out the oil would shoot right out of the side, wouldn't it?

A. Out of the side of what?

Q. Just suppose you cut a hole right around the side wall of this receptacle and still have this force in there, then the oil would shoot right out of the side, wouldn't it?

A. Some of that oil that came up to that opening probably would pass out.

Q. Run all out and would go in the direction of the least resistance, wherever that least resistance might be?

A. Without the opening or with the opening?
[82]

Q. Yes, with the opening?

A. Why, a very small portion if the opening was small, a very small portion.

Q. Well, it would be just in proportion to the size of the opening, wouldn't it?

(Testimony of Paule Paine.)

A. Yes, probably.

Q. If the whole side were cut out all of it would jump out, wouldn't it? A. Yes, sir.

Q. It would be just in proportion to the size of that; in other words the pressure on this oil would have a tendency to carry the oil with it in the direction of the least resistance, wouldn't it?

The WITNESS.—What was that last question?

(The last question is read by the reporter.)

A. It would have that tendency, but the major influence on the oil of course would be gravity which is causing it to descend.

Q. Which is causing it to descend, but as it came down here, as it came past this hole, why it would shoot right out, wouldn't it?

A. A portion of it would.

Q. Practically all of it would flow over the hole?

A. Beg pardon?

Q. Practically all of it would be flowing down over that space where the hole is?

A. The oil which came opposite the opening and was not carried around the sides of the hole would obviously be—

Q. It is a general rule and a principle of pressure that it goes in the direction of the least resistance, that is ordinary pressure?

A. That is the principle of what moves flowing fluids, is the difference in pressure.

Q. And it has a tendency to go in whatever direction there is the least resistance. [83]

(Testimony of Paule Paine.)

A. Possibly. I don't want to lecture here, but I would like to differentiate on that.

Q. Go ahead.

A. Respecting those classes of fluids, the two classes of fluids, the liquids and the gasses.

Q. Yes.

A. Of course it is more or less simple, but in order that we may be clear on it, a liquid takes the shape of the vessel containing it, but maintains the same volume.

Q. Yes.

A. Gas takes the shape of the vessel containing it but occupies all the volume, all of the vessels containing it.

Q. Yes.

A. I speak of that here because we have two fluids before us.

Q. Yes.

A. One liquid, which is oil. That descends in virtue of gravity to the bottom of the trap. The gas responds to the law of gasses and fills all the remaining available space.

Q. Yes.

A. And applies the pressure equally in all directions.

Q. In all directions. Would there be any greater pressure above this top cone than there was below it?

A. There cannot be any greater pressure there unless the opening between the top cone and the bottom of the trap is so very small that it would

(Testimony of Paule Paine.)

introduce a slight friction factor with reference to the discharge of the gas and the oil through that opening.

Q. You mean the edge of the cone and the side of the wall?

A. The edge, yes. And I wouldn't judge that to be great enough to have any effect on that cone, no effect of consequence.

Q. That would depend altogether on, I guess you would call it viscosity of the oil, wouldn't it? If it were the heavier grade of oil the pressure would be greater and if not it would be [84] lighter?

A. Yes, sir; and the passage of the gas through a small opening.

Q. Otherwise it would be the same, wouldn't it?

A. The pressure would be the same. There is a friction factor there that would have to be overcome, but for all practical purposes that influence would be negligible.

Q. Now, when that oil comes in from the well and strikes the top of that cone, flows down the upper portion of the cone until it comes to the edge, now would the tendency of the oil be to remain against and flow down the side wall, or would it be the tendency to kind of curve in or cup in?

A. I want to be sure that I understand your question.

Q. Well, I can illustrate it here. Now as this oil comes down and strikes this cone and comes down here to the edge, now would it have a tendency to continue right on down close up against this or

(Testimony of Paule Paine.)

would it have a tendency to kind of go in like that (illustrating).

A. My best judgment on that would be that if this shell were sufficiently close—if this cone were sufficiently close to the shell, the oil would continue from the edge of the cone over to the inside of the shell and then pass down.

The COURT.—Pass down along the—

A. The side of the shell.

Q. The side of the shell. But that wouldn't be an unbroken body of oil entirely around the cone because there might be passageways there through which the gas passes to the bottom of the trap, to the lower portion of the trap.

Mr. BAGG.—But it wouldn't cup in there or curve in there or whatever you would call it?

A. I don't think so.

Q. But if the oil was very heavy it might do that, mightn't it?

A. I doubt if weight would have as much effect on that as the viscosity of the oil to which you were referring a moment ago. [85]

Q. Well, the viscosity might have something to do with it, mightn't it?

A. The viscosity probably would.

Q. When I used the word "heavy" I meant heavy as distinguished from light oil?

A. Well, you see the viscosity of oil will vary greatly, even with oils of the same weight.

Q. Yes, but if this space in here was very nar-

(Testimony of Paule Paine.)

now do you think that the oil would continue down the side walls? A. I think so.

Mr. BAGG.—That is all.

Redirect Examination.

(By Mr. LYON.)

Q. Mr. Paine, in this Trumble trap to which you have been referring, what do you understand the function or object to be of conveying the oil down along the inner surface of the body of the chamber?

Mr. BAGG.—Now, if your Honor please, I think we will object to the form of that question because it is calling for a conclusion and it would probably better be answered by the inventor himself as to what—

The COURT.—This man is an expert.

Mr. BAGG.—Yes, sir; he might testify what the action would be, but I don't think he can tell what the object was. He can testify what the effect would be.

The COURT.—What we are getting at is the function.

Mr. BAGG.—Yes, he can testify what it did, what it actually did, but not what the object was.

The COURT.—There is no doubt about that.

The WITNESS.—The oil spreads out over this cone and as it passes down on the cone of course it becomes distributed over a wider and greater area. Then as it reaches the shell it passes down over the inside of this shell, at least probably the major [86] portion of it does, and in that manner exposes a large surface of fluid to this atmosphere of

(Testimony of Paule Paine.)

gas which is present in the trap. In that manner the gas more readily escapes from the oil than it would if contained in a solid body of great thickness. Just as I referred to before noon in the matter, gas contained in a large body of oil, in a very large tank, that does *does* not separate so readily as the gas which is in the bottom of that tank. It takes quite a while gradually to rise to the surface of the oil before it can escape from the oil, so that—

The COURT.—That is to say, if the oil was allowed to drop from there, straight down to the bottom without any outside hindrance the gas would not escape so readily as though distributed around there? A. No, sir; it wouldn't.

The COURT.—Very well. I understand it.

Mr. LYON.—Now, you have referred to viscosity. Just what do you mean by that as applied to an oil?

A. I don't know what the exact definition of viscosity is, but in simply language it is the readiness with which it flows.

Q. And when you say "of a higher viscosity" you mean the less readiness in flowing?

A. Good.

Q. And how does the viscosity of crude oil compare with the viscosity of water?

A. Well, it doesn't flow nearly as readily, as most crude oils. Occasionally a freak oil might have lower viscosity.

Q. Well then, for instance, if we were to take for example these glass models and flow water through them, the water would flow even more freely than

(Testimony of Paule Paine.)

ordinary crude oil mixed with gas? A. Yes.

Q. And would or would not such an illustration then where the water flowed down the inner surface of the glass be less of a flow down the surface than the oil?

A. Probably—I am not sure of this—probably the oil would tend to cling to the side of the vessel more readily than water [87] would.

Q. And that clinging would be due to friction?

A. Oh, that brings in the question of surface tension of fluid. There is another field.

Q. What I am after without leading you, the tendency of the oil then as it went down would be to roll over and over, wouldn't it, more than just simply to run down as water runs?

A. Oh, yes, the tendency particularly of California crude oils in their movements in all cases is to roll over and over in response to what we call turbulent flow. I speak of that because it is characteristic of Pennsylvania and Mid-continent oils to flow in what we call a straight line flow, each particle going straight ahead.

Q. And then the oil flowing down over the inner surface of the chamber or tank, turning over and over, would expose more surface and body of the oil to the gas?

A. There would be that form of agitation in there which would bring the particles of gas more frequently to the surface of the fluid and allow them to escape into the body of the trap.

Q. Is that one of the reasons why in a trap of this

(Testimony of Paule Paine.)

Trumble type the separation is increased by the downward flow along the inner surface of the chamber, in your opinion? A. I think it is.

Q. What is it that makes the gas and oil flow from an oil well?

A. The pressure in different cases, different forms of pressure; sometimes it is the pressure due to the gas, the pressure under which the gas is contained in the well expanding; in other cases it is due to the pressure caused by water underlying the oil. I speak of that because in some field the wells produce large quantities of gas along with the oil. In other fields there are wells which produce, flow large quantities of oil and make almost no gas but which in their later lives produce large quantities of water; but it is a pressure of some form in either case. [88]

Q. Then the pressure that we have been referring to here in connection with this trap is all a natural pressure from the interior out?

A. That is the pressure I have been referring to, the gas pressure.

Q. You referred on cross-examination to a Stark trap. Briefly tell us what that was?

The COURT.—What is that, Mr. Lyon?

Mr. LYON.—(Spelling.) S-t-a-r-k.

A. The Stark trap as I knew it in the time under discussion comprised a long length of rather large sized pipe, inclined slightly. The oil was admitted to it at one end and flowed down in the pipe. Along the top of that pipe at a number of points

(Testimony of Paule Paine.)

were a number of small outlets situated above the level of oil which accumulated in this length of large sized pipe. The gas escaped through these many small openings. The oil was withdrawn from the end of the inclined pipe. It had no automatic feature. A man stood there, and by means of a gauge press on the side observed the level of fluid in the pipe and opened the oil valve on the oil outlet line faster at times when the oil level was rising, closed it slowly when the oil level was lowering and kept that level of oil at about a uniform point. The gas escaped from above the surface of the oil along that inclined length of large pipe.

Q. Well, then, you say you kept the oil in the Stark trap or pipe about a uniform level. How much of a body of oil did they usually keep in operating that trap?

A. The height of the oil? Oh, the pipe was inclined and so the height of the oil would vary at different points because it reached a level, but it would be, I would say it would occupy the entire space of the pipe at the lower end and gradually come down to nothing at the upper end. These traps would be a hundred or more feet in length in cases usually made out of five or six joints of large sized pipe and the pipe was usually about 20 feet in length, each joint was 20 feet in length.

Q. Will you make us a rough sketch, Mr. Paine, of that trap that you are referring to, the Stark trap?
[89]

(The witness draws on paper with pencil.)

(Testimony of Paule Paine.)

Mr. LYON.—We offer the sketch made by the witness in evidence as Plaintiff's Exhibit No. 7.

The CLERK.—7 will be the next.

Mr. LYON.—Write the title "Paine sketch, Stark trap." (Addressing the clerk.)

Q. How as to the efficiency and operation did this Stark trap compare with the Trumble trap that you operated in 1915 on the Honolulu?

A. I never operated a Stark trap, but observed a number of them, studied them and considered the advisability of installing them. They appeared to be doing the work of separating the gas and the oil very efficiently. The disadvantageous features were there because of, first, their lack of flexibility, difficulty in moving them around quickly from place to place. What was desired by us was as cheap an article as we might attain that would do the work efficiently and one that could be put up very quickly so that there might not be unnecessary waste. The Stark trap required a great amount of pipe of both large pipe and small gas outlets, and a considerable number of valves and fittings of one kind and another and all of this equipment together with the considerable labor cost of installing them, making them prohibitive as compared with the Trumble trap.

Q. I believe you stated also that this Stark trap was nonautomatic; what did you mean by that?

A. Yes, I knew there was a third factor in there—I didn't recall it. The Trumble trap at that

(Testimony of Paule Paine.)

time required a man to be there to open and shut the valve on this oil outlet.

Q. You mean the Stark trap?

A. The Stark trap—to open and shut the valve on this oil outlet as the fluid level changed. If a well ceased flowing why he closed the valve altogether; if the well came in with a surge it was necessary to open it quickly and allow the oil to go out [90] and that was the means of operating the traps that I observed whereas the Trumble trap was absolutely as nearly completely automatic as one could expect to get.

Mr. LYON.—That is all.

Recross-examination.

(By Mr. BAGG.)

Q. Mr. Paine, I believe you have outlined here on this Plaintiff's Exhibit 7 the gas intake or the oil and gas intake and the oil outlet and the gas outlet. Now this Stark trap, the body, main body of the trap, is very much larger than both the outlet and the intake, isn't it? A. Yes.

Q. And the tendency, then, is to throw this oil in here and put it into this large barrel or whatever it is, has a tendency to slow down the speed of the oil or the velocity of the flowing of the oil and give it a chance to separate?

A. It has two tendencies; one to slow down that speed and the other to present a greater surface of fluid for the escape of gas.

Q. The oil comes in here (indicating); now you have indicated this oil level as being down here

(Testimony of Paule Paine.)

(indicating); this oil would be—there would be some oil up here as it came in here (indicating)?

A. There would be a stream of oil.

Q. There would be a stream of oil running down here. Would you mind illustrating that on your trap so it would show exactly how it would come in?

A. (Drawing on paper.) Now, this stream of oil coming in the form it would take and where the stream would enter the body of the fluid would depend entirely upon the velocity of the stream of fluid coming from the smaller pipe. It might come in there from the smaller pipe to the larger one at such a great velocity that it would in entirety be thrown out through the body of the [91] trap, or it would come down very slowly and trickle down and drop down. So I have indicated what might be called a composite picture occupying that whole body in there, but after it once gets down than it exposes the large surface for the escaping gas (indicating).

Mr. BAGG.—That is all.

Mr. LYON.—That is all.

Testimony of A. J. Gutzler, for Plaintiffs.

A. J. GUTZLER, a witness called on behalf of the plaintiffs, being first duly sworn, testified as follows:

Direct Examination.

(By Mr. LYON.)

Q. Please state your name, age, residence and occupation.

(Testimony of A. J. Gutzler.)

A. A. J. Gutzler; residence, 1325 Fair Oaks Avenue; South Pasadena; age, 59 years.

Q. You are one of the plaintiffs in this action?

A. Yes, sir.

Q. How long have the plaintiffs been manufacturing and selling Trumble gas traps?

A. Since September.

Mr. BAGG.—Wait a moment. We object to that unless he testifies that he knows—no objection to that.

The COURT.—Well, of course if he doesn't know—

Mr. LYON.—I said he was one of the plaintiffs.

Mr. BAGG.—I beg your pardon. I thought you said "defendants."

Mr. LYON.—He is one of the plaintiffs.

The WITNESS.—Since September, 1914.

Mr. LYON.—You have heard Mr. Paine's testimony? A. Yes, sir.

Q. Where was the first Trumble gas trap installed, if you remember?

A. Out at Taft on the Northern Exploration Company, I believe.

The COURT.—Where is that?

A. In Taft, in this state. [92]

Mr. LYON.—On the Northern Exploration Company.

A. On the Northern Exploration Company.

Q. Can you state to what extent the plaintiffs have manufactured and sold Trumble gas traps embodying the invention here in issue?

(Testimony of A. J. Gutzler.)

A. I have got a memorandum of it. I will look it up. Do you want the total number?

Q. Yes, and the sale price.

A. 583; and the total sale price?

Q. Yes. A. \$434.730.

Q. And can you give them also as to the states where they have been sold and installed, and by years?

A. I have got a copy of it. In California 281 traps were made and sold at a price of \$170,005; in Texas, 161 at a price of \$137,300; in Louisiana, 46, price \$41,600; Arkansas 7 traps sold, total price, \$7,650; Oklahoma, 41 traps sold at a price, \$35,400; Wyoming, 4 traps sold at a price \$1,350; exports 43 traps, \$41,065.

Q. When you say "export," just what do you mean by that, Professor?

A. Well, in some cases we don't know where they go. We have export agents and in some cases we have shipped them to them and they build them up.

Q. In other words, they are exported from the United States to the old country?

A. To the old country. We know that some went to Mexico, and some to Bombay, India, but we are not sure of all of them.

Q. Now, can you give the different states by years for such traps? Have you that in the statement?

A. Yes. Do you want to follow down by years for all the states?

(Testimony of A. J. Gutzler.)

Q. Yes, by years in gross, if you have it that way.

A. I haven't got that. [93]

Q. Well, by years by states?

A. California in 1914, 3 traps. You just want the number of traps?

Q. That is all.

A. Not the amount of money?

Q. That is all that is necessary.

A. Three traps. California, 1915, 39; Wyoming, 1915, 2; California in 1916, 23; Oklahoma, 1, and Wyoming, 2. California, 1917, 30; Oklahoma, 2, in 1917; California, 1918, 23; export 1918, 1. California in 1919, 23; Texas, 1919, 53; export 4. California in 1920, 63. Texas, 1920, 94; Louisiana in 1920, 38; Arkansas in 120, 4. Oklahoma, 1920, 10, and export 35. 1921, California, 56—

Mr. BAGG.—Now, if your Honor please, I believe we will object to any testimony as to 1921 because that is after this suit had been filed. The suit was filed on the 3d day of January, 1921.

The COURT.—What is the object of this testimony?

Mr. LYON.—The only object of this testimony would be to show the general adoption and use of the device, unless it was also to show the effect of the infringement on the falling off of the sales, and we don't care whether we go into 1921 particularly or not, although it is competent to show the general adoption and use.

The COURT.—Very well, you may answer that question. I think probably it would be pertinent

(Testimony of A. J. Gutzler.)

to show the general use of it as compared with previously.

The WITNESS.—Shall I answer?

The COURT.—Yes.

The WITNESS.—1921, California, 56; Texas, 13; Oklahoma, 21; and export 3; Louisiana 8, and Arkansas 3. That is up to the 1st of January.

Mr. LYON.—You may take the witness.

Cross-examination.

(By Mr. BAGG.)

Q. That memorandum is just taken from your books, is it? [94]

A. That is taken from a register from our serial numbers and the journal.

Q. You didn't make the entries in those books yourself? A. I made a part of them.

Q. Well, you didn't make them all?

A. I looked after them all.

Q. That is not then taken from the books of original entry? A. Yes, sir.

Q. They are taken? That is merely a copy of that made by you.

A. This is a copy made by me of the original entries made under my direction.

Q. Did you make that yourself or did some one in your office make that?

A. I made this, but I didn't type it.

Q. Well, the memorandum you have there is not the copy that you made yourself?

A. Made from the books?

Q. Yes, sir. A. Yes, sir.

(Testimony of A. J. Gutzler.)

Q. Is it one you made from the books or is it one someone has typed? A. Oh—

Q. Under your instructions?

A. Typed under my instructions. I got it off the books and then had it typed. Of course, I didn't type it myself.

A. Oh no.

Mr. BAGG.—That is all.

Mr. LYON.—That is all. [95]

Testimony of O. W. Harris, for Plaintiffs.

O. W. HARRIS, a witness called on behalf of the plaintiffs, being first duly sworn, testified as follows:

Direct Examination.

(By Mr. LYON.)

Q. Please state your name, age, residence and occupation.

A. O. W. Harris, 45 years old; reside at 954 South Vermont, and I am attorney at law.

Q. Otherwise than your legal status of admission to the Bar what other education have you had, Mr. Harris?

A. Until I came to California in 1912 I was engaged entirely in engineering work, and all my educational experience up to that time had been wholly engineering work.

Q. With whom were you so employed in engineering work?

A. I was employed by the Westinghouse Electric

(Testimony of O. W. Harris.)

Manufacturing Company previous to coming to California.

Q. In doing what line of work?

A. In doing designing of electrical machinery of various kinds.

Q. How long were you with the Westinghouse?

A. I was with the Westinghouse Company for 8 years.

Q. Are you familiar with the Trumble gas traps?

A. I think I am, quite familiar with them.

Q. In what manner and under what circumstances did you acquire your knowledge of the Trumble gas traps?

A. Soon after coming to California I became associated with Mr. F. M. Townsend and Mr. Frank L. A. Graham, who at that time were in the business of soliciting patents and patent attorneys in general practice here. Mr. Townsend who is, as I understand it, one of the plaintiffs in this suit, was particularly interested with Mr. Trumble in other matters, and Mr. Trumble brought this invention to the office in which I was at that time employed, and an application for patent was made, a large portion or all of which I wrote and I had charge of the prosecution of the case before [96] the Patent Office. In other words, I wrote the most of the arguments previous to the allowance of the patent. I also saw the traps in operation and was familiar in general with the business in our office and our bookkeeper took care of a portion of the records, and so forth.

(Testimony of O. W. Harris.)

Q. Since the preparation and filing of the application for the Trumble patent in suit, have you seen and observed any of the Trumble traps in operation?

A. I have seen them from time to time when I would be in the oil fields. I have been in the oil fields a great deal of the time the last five or six years.

Q. To what extent, in accordance with your observation of such Trumble gas traps have they come into use in California?

A. In passing through the oil fields the Trumble traps are very readily identified through their peculiar shape and the way they are mounted, and very recently I had occasion to go through the oil fields and they are very noticeable—nearly every well around any field in this part of the state has a Trumble trap on it and they can be seen as you drive by on the road. They are in very common use on all of the wells.

Q. Are you acquainted with the defendant Lorraine? A. I have met Mr. Lorraine.

Q. Did you ever examine a trap on the Tonner lease? A. I did.

Q. And whose manufacture was that?

A. I believe it was of Mr. Lorraine's manufacture.

The COURT.—What trap was that? Excuse me.

Mr. LYON.—(Spelling.) T-o-n-n-e-r lease.

(Testimony of O. W. Harris.)

The WITNESS.—Of the General Petroleum Corporation at Brae, California.

Q. And did you identify that as of Mr. Lorraine's manufacture?

A. It had Mr. Lorraine's nameplate on it.

Q. Do you remember the number of the well?

A. The trap that I examined was on the Tonner No. 4 [97] well.

Mr. LYON.—All right. Will the defendant admit that was a trap of his manufacture and sold by the defendant?

Mr. BAGG.—No, we don't admit it.

Mr. LYON.—All right. When was it, Mr. Harris, that you examined, first examined that trap?

A. I don't remember the dates, but I have notes on which the dates appear, notes which I made at the time and also some photographs that I took.

Q. I show you four photographs and will ask you if you have ever seen them before (handing photographs to the witness)?

A. Yes, I made these photographs myself—that is, I made at least three of them; I think I made them all.

Q. And from them can you tell us approximately what the date was?

A. I was on the Tonner lease and made these photographs on the 15th day of December, 1920.

Q. I see "12-15-1920, O. W. H." appears at the bottom of two or more of these photographs. Did you scratch that on the negative?

A. I wrote that on the negative myself. It is

(Testimony of O. W. Harris.)

an autographic camera and I wrote the date on that at the time the photographs were taken.

Q. Do these four photographs correctly show the trap at the said Tonner lease at that time?

A. They do.

Q. And you said that on the trap it contained the name of the defendant "D. W. Lorraine," or "Lorraine trap" or what was it?

A. I have somewhere a sketch that I made on which that date appears if I can find it.

Q. Please produce such sketch?

A. I don't know that I have a memorandum with the exact reading of that nameplate, but I think it read "The Lorraine Gas Trap," and some other data below. The superintendent on the [98] lease—

Mr. BAGG.—Well, we object to what he said.

Mr. LYON.—All right. We will prove it before we get through. You are not mistaken that it was on Well No. 3 instead of 4 of the Tonner lease?

The COURT.—No. 3, you say?

Mr. LYON.—I think so.

A. Well, the two wells are side by side and it is possible I am mistaken. It was either Tonner No. said on No. 4.

Mr. BAGG.—We will admit it on No. 3, but you said on No. 4.

Mr. LYON.—Oh, you will admit it on No. 3?

Mr. BAGG.—Yes, we will admit it on No. 3.

Mr. LYON.—And that it was a trap of the defendant's manufacture and sold, is that correct?

(Testimony of O. W. Harris.)

Mr. BAGG.—Yes.

Mr. LYON.—We offer in evidence the four photographs as Plaintiff's Exhibit No. 8.

The CLERK.—Four photographs.

Mr. LYON.—Yes, 8¹, 8², 8³, 8⁴, I think that is the best way to mark them. Did you at the time of the examination of this trap have any opportunity to ascertain its interior construction?

A. Yes, I had an excellent opportunity.

Q. Please go ahead and detail what you did at that time find and what you ascertained it to be and what was the interior construction?

A. At the time that we visited the well there was also on the lease and at the well a Trumble gas trap which is shown I think in those photographs. It was possible to operate the well either on the Trumble or on the Lorraine, and the people in the oil company very kindly allowed us to see the Lorraine trap in operation, and they also shut it down and allowed us to get into the interior of it and take measurements, to investigate its interior construction. [99]

Q. Does this photograph 8⁴ show both the Trumble and Lorraine trap?

A. Yes, it shows it.

Q. Please take 8⁴ and mark one with the name "Lorraine" and the Trumble trap with the name "Trumble."

A. (Marking.) The Trumble trap is on the left and the Lorraine trap is on the right.

Q. Now, proceed.

(Testimony of O. W. Harris.)

A. In the top of the trap there was a manhole or cover, and we took this manhole off—after we shut the Lorraine trap down we took the manhole off, and were able to get inside and see how it was internally constructed. We couldn't see the entire internal construction of the trap and in some of it it was necessary to reach around down in and feel to see exactly how it was constructed. At that time I made sketches showing the interior construction as I found it, and made rough memorandums as to the internal construction, and I have here a sketch that was made on the lease at the time the dimensions were made, and also a second sketch that was made on the lease with the addition of some numerals that appear in ink which were made the next day.

Q. These correctly show, do they, the construction of that Lorraine trap, on the Tonner lease?

A. They correctly show the construction of that Lorraine trap as far as I was able to determine at the time.

Mr. LYON.—Well, we will ask that these two sketches be marked and offered in evidence as Plaintiff's Exhibits 9¹ and 9². Proceed.

The WITNESS.—The trap at the time it was operating—when we arrived on the lease the trap was operating under commercial conditions, and it had on the side of it the gauge, pressure gauge which I think is shown in the photographs—yes, it had a pressure gauge which is plainly shown in the photographs; and during its operation we ob-

(Testimony of O. W. Harris.)

served his gauge. The gauge appears on the side of the trap. During the entire operation of the trap [100] that gauge varied very little from 45 pounds on the trap, and during the time that I was on the lease 45 pounds was the pressure that was maintained on the interior of the trap as shown by the gauge which is a part of the trap.

Q. Well, please go ahead, by means of these sketches that you have produced and your knowledge gained from this inspection of this Lorraine trap on the Tonner lease, and tell us what its mode of operation was and its construction. And you may, at the same time, if you will, compare it with the device of the Trumbel patent, Plaintiff's Exhibit 1.

Mr. BAGG.—Now, if your Honor please, I think what he ought to testify to is what he actually saw there.

A. I will try to confine myself to that, Mr. Bagg. The gas and oil were let into the top of the trap through a pipe having the numeral 6 thereon, and down through the top of the trap into a spreader and was then spread on the baffle-plate, which extended across the trap with the exception of a space of two inches next to a partition which is marked 1; this partition marked 1 extended from the part near the center of the trap well down into the interior of the trap. The oil and the gas then came in, was from this pipe by this baffle-plate or spreader 4, passed down over the edge of the interior surface of the trap into this 15 inch

(Testimony of O. W. Harris.)

chamber on one side of the trap, and the gas which was released from the oil passed upwards and inside of the separator and through a two-inch throat device of the trap, being taken off by a gas pipe line marked 9.

Mr. BAGG.—Just a moment. I assume you didn't see that operation?

A. We didn't see the operation, couldn't get at it to see.

Q. All that is your theory?

A. Simply location.

Mr. BAGG.—We object to his theory, if the Court please, [101] because he hadn't shown himself to be an expert on the question of the action of oil and gas. He is qualified as an electrical expert but not as an oil and gas expert.

The COURT.—You think you have sufficient knowledge to testify as to the action of the oil in there?

The WITNESS.—I think I have, your Honor. I have had some additional experience which has not been detailed.

The COURT.—Very well. Do you want to examine him further about that?

Mr. BAGG.—Yes, I would like to test his—

The COURT.—Very well.

Mr. LYON.—Just generally, Mr. *Gutzler*, state what your experience has been in connection with the actual operation of the separation of oil and gas?

A. About 5 years ago—

(Testimony of O. W. Harris.)

Q. And oil separation, too?

A. About five years ago I became interested in the problem of taking water out of oil, not particularly taking gas out but taking water out of oil; and there was a company organized here in Los Angeles known as the National Dehydrating Company of which I was and am president, and during a period of three or four years I spent over half of my time in the oil fields, working with these dehydrating plants for taking water out of the oil and I lived on the leases and slept in bunk houses and I was with the oil men all the time and I think I have quite a fairly comprehensive knowledge of the oil business. At that time the problem we were working on was a somewhat similar problem to this. It was a problem of taking the gas out, very much as these take the water out. I saw a great deal of operators and talked with a great many men and I think I am competent to speak as to the method of those trap operations.

Mr. BAGG.—That is a matter for the Court to determine whether you are competent.

The COURT.—Well, the Court asked me about it.
[102]

Mr. BAGG.—Whatever testimony you have given already with reference to the action of this oil and gas separator has been based purely upon your suspicion as to the action of it. You don't know positively how that did happen?

A. I have never seen the interior of that trap when it was in operation because it is a physical

(Testimony of O. W. Harris.)

impossibility to see it. You can't operate with the cover off very well.

Mr. BAGG.—Now, if your Honor please, we move to strike out the testimony of this witness as to the action of this oil and gas in this trap because of the fact that the witness has not qualified himself to testify as to the action of oil in this trap under these conditions; and from the further fact that the witness—that he testified he has never seen the gas trap in actual operation, that is so far as the internal action of the trap is concerned and is only speaking hypothetically.

The COURT.—Are you able to state what the operation is on your own machine?

Mr. BAGG.—Yes, sir; we will be able to furnish the Court with definite information as to how that operates.

The COURT.—How it operates?

Mr. BAGG.—Yes, and we will.

Mr. LYON.—From observation.

The COURT.—Well, this man is an expert and is more capable of testifying about those things than the general run of witnesses and knows more about it; he has been in this.

Mr. BAGG.—I don't think, your Honor, he testified he worked about oil and gas separators; he testified he slept out in the oil fields and has been out there a good deal. He didn't testify that he knew anything particularly about the action of oil and gas separators. He did testify he knew some-

(Testimony of O. W. Harris.)

thing about the dehydrating of oil which he says was a similar proposition.

The COURT.—Well, but his experience amounts to a good deal. I think I will allow the testimony.

Mr. BAGG.—Just give us an exception. [103]

The COURT.—You can take the exception.

A. In the center of the trap on the opposite side of the partition 1 from the chamber marked 2 in the sketch there were two floats.

Mr. LYON.—Point them out.

A. On the opposite side of the partition 1 (indicating), from this chamber 2 were two floats, long floats, and these floats were attached by a suitable lever system which can be distinguished in the photograph, particularly figure 1 in the photograph; a valve on the outside of the trap, one of which controlled the flow of oil and the other which controlled the flow of gas, and this linking system which extended outside of the trap terminated in a long lever on which there were weights, and on the operation of the trap as we saw it when we first went there these weights would move up and down very little evidently as the flow of oil in the trap varied—in other words there was a very slight movement, very little movement. However, by taking a hold of this weight it could be pulled down or could be pushed up, showing that it was balanced there, and had a capacity for moving in either direction, and by experimenting, pulling this up and down we determined that this lever and weight not only controlled the flow of gas but also

(Testimony of O. W. Harris.)

controlled the flow of oil, in other words that both the flow of oil and gas from this separator could be controlled by manipulation of the lever. I don't know what other information you might want. I looked it over carefully and Mr. Trumble was there and Mr. Townsend was there, Mr. Burrows of the General Petroleum was there, and we went into the interior of the trap. Mr. Trumble got up on top of the trap and looked in and we have his picture, figure 4 looking into the trap, shows the method of getting into it. We also have Mr. Trumble's picture moving the weight up and down showing how its action can be controlled.

The COURT.—What do you mean by the flow of oil, the gauge of the oil as it passed out?

A. No, I mean as the—evidently the well would flow more [104] or less as I would say by heads—in other words it was not an absolutely uniform flow, and if the flow of oil would increase—

Q. As it came into the tank?

A. As it came into the tank.

Q. That lever then regulated the flow of oil more or less as a gauge?

A. It seemed to regulate the pressure; it seemed to keep the pressure constant at all times.

Mr. LYON.—Mr. Harris, I show you a glass bottle with a top. What is it?

A. That is a model that shows the internal construction, that is, partially shows the internal construction of the Lorraine trap in regard to which I have been testifying.

(Testimony of O. W. Harris.)

Q. The one on the Tonner lease?

A. The one on the Tonner lease, No. 3 Well. It shows the oil in that pipe, the spreader, the throat inside of the spreader and the gas outlet pipe through which the gas was finally taken out. It doesn't show the oil outlet pipe nor does it show the two valves, one of which was on the oil outlet and the other of which was on the gas outlet. The gas outlet pipe comes from the top and contains the gas valve and the oil outlet comes down there (indicating) and contains the little handle for them to turn on this lever and both in turn operated to control the flow.

Q. I wish in giving your testimony you would speak just a little slower. I am afraid the reporter in this room where there is a good deal of noise cannot quite catch it all. Now this glass and brass model that you have last identified then, is a correct illustration of so much of the Tonner trap as it shows? A. Yes.

Mr. LYON.—We offer this model in evidence as exhibit—

The COURT.—Any objection to this model?

Mr. BAGG.—Yes, we have an objection.

Mr. LYON.—We offer it in evidence as Plaintiff's Exhibit 10. [105]

Mr. BAGG.—We object because it is only the testimony of a witness who went out there and examined the trap and he doesn't testify as to whether or not it is in exact proportion to the Trumble trap or is an exact duplicate, either drawn

(Testimony of O. W. Harris.)

to scale or drawn in any other way that makes it accurate.

The COURT.—Who made that model?

A. That model was made for me by a workman employed in Mr. Trumble's shop.

Q. Made according to size?

A. It was made from this sketch, plaintiff's Exhibit—it was made from a carbon copy of this sketch, Plaintiff's Exhibit No. 9, that is a sketch that I gave him.

Q. Have you got the dimensions there?

A. The dimensions are here, and that is proportional to the dimensions of this sketch, Plaintiff's Exhibit 9 as nearly as it could be duplicated.

Mr. BAGG.—Did you test that to see whether it was drawn to scale or not?

A. I checked up the main dimensions, that is all the dimensions that were at all essential in the thing. The importance of making a glass model, an exact duplicate of the model trap, is so you can see the internal processes of it.

Mr. BAGG.—Well, we renew our objection.

The COURT.—You say that that is a fair model in proportion to the size and dimensions and so forth of the original?

A. I think it is a fair representation.

The COURT.—The objection is overruled.

Mr. BAGG.—Note our exception.

Mr. LYON.—Will you take this and demonstrate by water and water can the action of the oil and gas in flowing, so as to show the distribution.

(Testimony of O. W. Harris.)

The COURT.—Are you testing that with water?

Mr. LYON.—With water. That was the object, if your Honor please, of my examination of Mr. Paine in which he said that [106] water had even less viscosity and the action of the oil in flowing down the sides of the chamber or trap would be even less than that of oil.

The COURT.—He said the oil would be—

Mr. LYON.—Roll over and over.

The COURT.—Would roll over and over, while the water would—

Mr. LYON.—In other words the water would go down with less action of rolling over and over, and just simply flow down while the oil would stop and roll over and over. Acts so as to throw all particles of its body outward so the gas could get out. But this demonstration just simply shows where the spreading of the oil is actually on what we term in our patent and claims the inner surface.

The COURT.—My impression was that the water followed the glass.

Mr. BAGG.—Yes.

The COURT.——more readily, more evenly, than the oil would, and the water itself would not amount to very much.

Mr. LYON.—I would be very glad to use natural oil, but oil is black and the moment that we put oil in there, why we are through, we can't see through it. It is only an approximate test anyway and shows the action.

(Testimony of O. W. Harris.)

The COURT.—Have you any objections to that test?

Mr. BAGG.—Yes, sir, we do, because in the first place oil, as your Honor has suggested does not act the same as oil and gas, and in the next place that oil itself would not act the same, although he offers to produce oil here, it wouldn't produce the same effect because as testified by the witness and also specified in the specifications of the Trumble trap this material that comes into this gas trap is of a foaming substance, a mixture of oil gas, water and sand; until you get all that mixture bottled in foaming form as described this would not, even the oil itself give any idea of the action of the oil and gas when it comes in and the oil and gas separator. [107]

The COURT.—That doesn't appear to me to be a fair experiment.

The WITNESS.—It simply indicates, your Honor, how a fluid if it went through here this way the oil would go through; if you put water in it will work the same way.

Mr. LYON.—Now, you may answer the rest of the general question how this Lorraine trap on the Tonner No. 3 Well which has been stipulated to have been manufactured and sold by the defendant and which you say you examined and made these sketches of compares with the inventions of the patent in suit? I believe you are familiar you said with that patent? A. Yes.

Mr. BAGG.—Now, if your Honor please—

(Testimony of O. W. Harris.)

The COURT.—Just let me ask one question—what is the objection?

Mr. BAGG.—Now, if you Honor please,—I was going to object to that, being a matter for the Court to determine. The drawings are here, the description has been given and the Court will determine the action of those, the comparison of the action of the two traps. We have had expert testimony here to testify to the action of this oil as it comes into the Trumble trap. This present witness has testified as to the action of the Lorraine trap. Now it is for the Court to determine whether or not the action of the two are the same or similar or in any way one infringes the other.

The COURT.—That is the way we determine these things in patent suits is by expert testimony. The Court is not always an expert.

Mr. BAGG.—I know that, but in view of the fact that the action of both of these have been testified to by the experts, it is then for the Court to determine whether or not the action of the two is the same. The expert testified very carefully this morning as to the entire action of the Trumble trap. This witness testifies very carefully and very accurately as to his interpretation of the way the Lorraine trap acted. Now I take it that the Court having [108] seen and heard the explanation that these experts have as to the action of these two traps, it is for the Court to determine whether or not the action is similar.

The COURT.—The witness being an expert on

(Testimony of O. W. Harris.)

that subject I will take his testimony. There is one question I want to ask him further: Did you take note of the distance existing in this trap between the bottom of that incline and the wall itself (indicating)?

A. Well, your Honor, it was a very hard thing to determine. It was necessary—I might explain that our access, this being a commercial trap we couldn't discard in any way—we did cut into it the best we could. This hole which is marked 8 on the sketch, Plaintiff's Exhibit 9, normally has a cover on it and that cover was taken off. Now we could look in and we could see the top of the partition and the top of the baffle-plate and part of the baffle-floor as it went down into the trap. I was just about able by reaching in with my arm to reach to the bottom of the baffle-floor, and there was about room enough to get my hand down between the edge of the baffle and the wall of the trap—in other words, I would estimate the distance there might perhaps have been an inch.

The COURT.—What is it you call that piece?

A. The baffle or the spreader.

Q. Baffle?

A. Baffle. It might possibly have been an inch, possibly it might have been a little more, I wouldn't attempt to say accurately because we would only tell by feeling down in there.

The COURT.—Very well, that answers my question. Go ahead.

Mr. LYON.—And Mr. Harris in making this

(Testimony of O. W. Harris.)

comparison, if you are so inclined you may also have reference to the Lorraine trap, Plaintiff's Exhibit, Lorraine 3.

A. The patent, Lorraine patent, Plaintiff's Exhibit No. 3, is not exactly in accordance with the trap that I observed, in [109] that in the patent, particularly in figure 4, there is shown a sort of box marked with numeral 15, which has an opening in the front into which a pipe, 14, projects. On the trap which I observed on the Tonner lease there was no such box. There was a sort of spreader on the end of the pipe 14, but there was no box of this general type on there. The spreader came down and was supported by means of cleats or straps below here (indicating), and we are able to get the dimensions by taking the position of the rivets on the outside of the trap and determined that was 25½ inches down. Aside from that the patent—figure 4 of the patent is very similar to the trap that I saw; in other words, there is a partition in the patent marked 19, which extends from the top down to the bottom. There is a spreader marked 17 to the right of that partition as it is found in figure 4 of the patent and the oil comes in in the patent through a pipe 13, strikes upon a spreader and is, I assume, thrown outwardly by the spreader against the oil trap 2, moving down and there over.

Q. In the Lorraine specifications of the patent I call your attention to page 3, lines 5 to 12 in particular (handing document to the witness). Read that

(Testimony of O. W. Harris.)

to the Court in connection with this description of the spreader or duplicater you are referring to.

A. To make this portion of the patent intelligible we have to start on the line 129 of page 2. The Lorraine patent says: "The valve 28, having been set by its regulating means 29 to hold a given pressure in the receptacle 2 then as the emulsion is supplied to the receptacle by the oil supply pipe 12 the latter will be directed down the smaller compartment through the inlet or feed sleeve 15 by which the oil is showered onto the adjacent portion of the receptacle wall whence it flows downwardly between the wall and the partition 19, any gases being liberated rising to the top of this compartment and passing over the upper end of or through the partition 19 and accumulating in the upper end of the receptacle 2." [110]

Q. Will you please take this large reproduction and point out to the Court that portion of the description that you have been referring to as to showering action, and so forth?

A. The pressure, I might perhaps refer to lines 111 to 115 of the patent, in which it says: "as above mentioned, there is maintained in the receptacle a gas pressure as determined by the *by the* adjustment of the pressure regulating valve 28." In other words valve 28 regulates the pressure inside the receptacle, the pressure being maintained in the receptacle by that valve, the mixture of oil and gas which is under pressure; otherwise there would be no pressure in the receptacle and it is entirely dependent upon

(Testimony of O. W. Harris.)

the initial pressure to get any pressure at all. The oil and gas under pressure is delivered through the pipe 14 of the patent, passes downward through that pipe upon the baffle or spreader 17. It is thrown outwardly by that spreader on to the inner wall of the trap. It flows downwardly over that inner wall. The gas is released in its downward flow, passes upwardly through the throat between the vertical portion of the spreader 17 and the partition 19,—in other words, you see this throat up through here (indicating),—and it is finally taken off through a gas pipe which is not shown in this view because it is cut off. It is the gas pipe 22 of the patent.

Mr. LYON.—Now, what sentence or portions of specifications of this Lorraine patent, Plaintiff's Exhibit 3, do you rely upon for this statement that this incoming gas and oil is showered on to the inner surface of the chamber, 2.

A. Lines 5 and 6.

Q. Read it.

A. On page 3, which says: "by which the oil is showered on to the adjacent portion of the receptacle wall whence it flows downwardly between the wall and the partition 19."

Q. Now, then, proceed with your comparison with the invention of the patent in suit. [111]

A. Do you wish me to compare the claims of the Trumble patent?

Q. No, not the claims; the general mode of opera-

(Testimony of O. W. Harris.)

tion and the devices and the combination as it is expressed in the patent?

A. Well, so far as I can see the Trumble trap and the Lorraine trap operate exactly the same way. The Lorraine trap has certain structural differences—for instance, the Lorraine trap has very large, two very large floats which are placed on the other side of this partition. These floats operate two valves outside the trap one of which controls the oil and the other controls the gas. In the Trumble patent the float is placed in the bottom of the trap and operates a single valve; but so far as the method of getting the oil in the trap and getting the gas out of the oil, it seems to me that the Trumble and the Lorraine operate in exactly the same way, in other words, the oil and gas are brought in under pressure; they are allowed to flow downwardly through the trap; the gas is taken off through what might be called a separate conduit—in other words, it is taken away from the oil and it is taken out of it—I was somewhat led to that conclusion by the fact that if Lorraine didn't desire to get this operation it seems obvious to me that he would have placed this lower down in the chamber. He gains nothing by dropping that oil. He might better bring it down to the oil level and discharge it quietly, that is, and let it fall in there as it does. Then in the Lorraine trap you will find expansion chamber arranged to receive quietly rather than to let it fall in there as he does.

Q. Then in the Lorraine trap you will find an ex-

(Testimony of O. W. Harris.)

pansion chamber arranged to receive oil and gas, do you?

A. Yes. That may be considered as the entire interior of the chamber which is under uniform pressure or it may be considered as a partition between the partition 19 and the wall 2. In other words, you may consider this small portion in here as an expansion chamber (indicating), or may consider it all an expansion chamber, it is a matter of choice. [112]

Q. All above the liquid?

A. All above the liquid.

Q. Now, what means, if any, do you find in the Lorraine trap for spreading the oil over the wall of such chamber to flow downwardly thereover.

A. No. 17 of the patent.

Q. And where on this device are the gas take-off means?

A. The gas take-off means in the Lorraine is the pipe 22 in combination with this throat—this throat in here, (indicating)—in other words, that gas is taken off under this baffle, just as in the Trumble, is taken up in the Trumble and taken out, just as in the Trumble.

Q. In which figure is this? A. Figure 4.

Q. And you have valve control means arranged in the Tonner installation and in the Lorraine patent for controlling the submergence of oil in the chamber?

A. That is the oil flowing on the outside of the

(Testimony of O. W. Harris.)

trap which is worked from the floats instead of the top.

Q. And what means do you find for maintaining a pressure in the trap?

A. We find two means. In the patent he shows a valve 28 which he—may I see that trap—valve 28 which he describes in these words, page 2, line 32: “From the valve 26 is continued a delivery gas pipe 27 in which there is mounted a valve 26 controlling the flow from the receptacle 2.” In other words that valve marked 28 in figure 3 of the patent is stated by Mr. Lorraine to be for the purpose of holding a pre-determined back pressure in the gas line and in the receptacle 2, in other words, in the interior of the trap.

Q. And do you find any other references to the maintenance of pressure in this patent, in this patent?

A. Yes, there are repeated references, line 111, page 2, it [113] is said: “There is maintained in the receptacle a gas pressure.” On line 23, page 3, it is said: “The gas will be compressed to a pressure substantially equal to that determined by the valve 28.” On line 46 it says: “By maintaining pre-determined pressure in the oil receptacle the latter is subjected to pressure.” That is all that I have marked at the present time.

Q. Now, on the Tonner lease Lorraine trap, what means were there for maintaining that pressure?

A. There were the means in the patent corresponded to those you pointed out in the patent?

(Testimony of O. W. Harris.)

A. Corresponded to those in the patent?

Q. And what pressure was maintained at that?

A. There was a pressure of substantially 45 pounds. Unless we manipulate the trap the pressure remained very constant on that lease while I was there.

Q. Did you examine any other Lorraine trap within the last week? A. Yes, sir.

Q. Where?

Mr. BAGG.—We object to that, if your Honor please.

The COURT.—Isn't that matter in issue?

Mr. LYON.—This is the 1922 trap, another device they have been bringing out since the suit was filed.

The COURT.—Do you allege that?

Mr. LYON.—Yes, we allege in our bill of complaint that the defendant is—at the time it was filed, infringing, and that it intends to continue to infringe, and we are going to prove the intention, because it is about a year since the filing of the bill, by showing what they are now doing. They make a slight modification in the trap which is a device of this other model, and we will show we purchased one of their traps on last week in order to have the last evidence and not have to try two cases, and this is the device that we are now going to prove.

The COURT.—Did you file a supplemental complaint? [114]

Mr. LYON.—I don't know anything, your Honor, I could do, except to copy that bill, because a bill of

(Testimony of O. W. Harris.)

complaint in equity is in a form which brings that in—not like an action at law. We might be defeated in this case, having filed this bill of complaint in December, 1920, if we had only shown this installation in December, 1920, of this one trap, and they might say that they had ceased to manufacture and sell it and had no intention of infringing. Our allegation in that regard is this, "That at diverse times during the six years last past, in the Southern District of California, the defendant herein, David G. Lorraine, without the license or consent of plaintiffs, has used the apparatus described, claimed and patented and has made and used the apparatus described and infringed upon said letters patent and each and all of the claims thereof and intends and threatens to continue to do so." Now, all we could add to the general allegation if we filed a supplemental bill is that they are continuing to manufacture, and we would do that by producing the actual device that they are now making. They are continuing as is claimed to infringe and we say that is only a coverable change. We have never been in a patent case where the bill of complaint was in that general form that the court shut out any of their subsequent devices that the plaintiff elected to bring in as proof of intention and fact that they were continuing to infringe, because our whole injunction, which is the main relief, of course, that we are after, and the one that gives jurisdiction in equity, depends upon our showing that the infringing act was a continuing one.

(Testimony of O. W. Harris.)

The COURT.—Here is a device that was constructed from different principles involved in the other one?

Mr. LYON.—Not according to our theory, no different in principle.

The COURT.—I know. They might claim that on the other side. It might be well to file a supplemental complaint and get the [115] matter in issue.

Mr. LYON.—Well the whole matter is in issue because defendant denies an intent to infringe, and that is the only way we can prove it is to prove what they are actually doing, what they are doing now. Judge Trippet within the last few weeks defeated a litigant in equity because the testimony was two or three years old as to the actual infringement when there was nothing to show that during the intervening time they had used anything that did infringe, and defeated it on the ground of jurisdiction, so far as equity was concerned, and the defendant denied that he was longer infringing, just the same as they do here. And as to a supplemental bill our difficulty is this: Our supplemental bill would simply be what? A repetition of our allegation of the bill that they are now infringing and intend to infringe and we never would get through with the number of different devices that we could bring before the Court. And the situation is this, also: Supposing that the case is tried solely on the issue of this first device and an injunction is issued. Does it or does it not cover this device? If we had

(Testimony of O. W. Harris.)

gone to an injunction because we could try them in contempt proceedings; perhaps we would have to file a supplemental bill, but I know of no rule of equity which will shut us off from bringing in all the information up to the date of trial under the allegation of the intent to continue.

Mr. BAGG.—If your Honor please, the Court has held in *Hammond Paving Company vs. Bryant*, 113 Federal, 316, that a suit for infringement of patents cannot be sustained by proof of acts of infringement committed after the bill was filed. The court held on that very carefully. Now, then, of course with reference to what counsel on the other side said with reference to our intention to continue our infringement, that was merely based on an allegation in his petition for a bill of complaint for the purpose, if possible, securing a temporary restraining order. That is all that was put in there for. That is the customary allegation to put in a bill of complaint where one seeks to get a [116] temporary restraining order or temporary injunction as the case may be for the purpose of stopping further operations because of this intention to or expressed intention or alleged intention to continue, and ask the Court then by virtue of that allegation and that statement in the bill of complaint to grant a temporary injunction which would prohibit the party from continuing any act of infringement.

The COURT.—What have you to say about reaching this by supplemental complaint?

Mr. BAGG.—If they were to file a supplemental

(Testimony of O. W. Harris.)

complaint there is no doubt they could bring it in by supplemental complaint. I agree with the Court in that regard. If they would bring a supplemental bill here of course they could do that, but they can't do it in the absence of the supplemental bill because they stand upon the allegations in the bill of complaint at the time it was filed.

The COURT.—I think you had better file your supplemental bill

Mr. LYON.—We ask leave then to file a supplemental bill in the morning and bring this device in.

The COURT.—Have you one that has been operated since the commencement of this suit?

Mr. LYON.—I believe, your Honor, the practice in New York is when a question arises like this to dictate the amendment or supplemental bill right to the reporter. Now, maybe we might follow that practice here.

The COURT.—Well, you can file it in the morning.

Mr. LYON.—We can file it in the morning, that satisfies us. And shall we proceed with the evidence or hold that until morning?

The COURT.—You can hold that until morning. The Court is going to adjourn at 4 o'clock.

Mr. LYON.—Now, that is the next question I wanted to take up with Mr. Harris.

The COURT.—Very well. If you want to take this up you might proceed and if you don't get your bill in the evidence will go out.

Mr. BAGG.—Now, if your Honor please, I think

(Testimony of O. W. Harris.)

the supplemental bill—we ought to have some notice of what the allegations are and be prepared to meet it. [117]

Mr. LYON.—The allegation will be the same that you are continuing to manufacture and sell this trap like the one the Lacey Manufacturing Company is manufacturing. We can produce it for the purpose of evidence in this case and shall be pleased if the Court wishes and shall be willing to inspect the actual trap which we have opened up by cutting it with acetylene torch in order to show—we can show the entire interior of it.

Mr. BAGG.—If your Honor please, we came into this court upon the allegation of the bill of complaint originally filed, and we didn't come here to make a defense as to that particular trap and we certainly ought to have time to prepare for that; and I think that before the evidence should be taken in that case that we should have some notice of what the bill of complaint is going to be. We will probably have to prepare an answer to that supplemental bill and I think we ought to be allowed to see the supplemental complaint and will probably prepare a supplemental answer and then prepare for trial on that supplemental. Now, I think it is probably possible we could go right on with the trial, we could get ready and then take it up; but I wouldn't want to bind myself right now on that because of the fact I haven't consulted my client or my witnesses in regard to it.

(Testimony of O. W. Harris.)

The COURT.—You can serve that bill by nine o'clock in the morning?

Mr. LYON.—We could serve that bill a good deal earlier than that, your Honor. If we take an adjournment now and Mr. Bagg remains at his office we might serve it on him by 5 o'clock. We will file it in the morning. If you are not there we will serve it by nine in the morning.

The COURT.—Very well. The Court then will adjourn until to-morrow morning at 10 o'clock.
[118]

[Endorsed]: Original. In the District Court of the United States for the Southern District of California, Southern Division. (Before Hon. Charles E. Wolverton, Judge.) Francis M. Townsend et al., Plaintiff, vs. Davis S. Lorraine, Defendant. No. E-113—Eq. Reporter's Transcript of Testimony and Proceedings. Filed Apr. 7, 1922. Chas. N. Williams, Clerk. By R. S. Zimmerman, Deputy Clerk. Vol. I. Los Angeles, California, March 22, 1922. Reported by J. P. Doyle, E. L. Kincaid, Doyle & St. Maurice, Shorthand Reporters and Notaries, Suite 507, Bankitaly International Building, Los Angeles, California, Main 2896. [119]

VOLUME II.

INDEX.

Plaintiff's Witnesses:	Page		
	Dr.	Cr.	Red.
Ford W. Harris (Recalled)	117	131	
		135	
Thomas T. Davis	133		
David G. Lorraine	158		
David G. Lorraine (Re-			
called)	184		
William G. Lacy	163		
Hans K. Hyrup	166		
Paul Paine	167	169	
William C. Rae	176	180	
Milon J. Trumble	192	197	
Defendant's Witnesses:			
David G. Lorraine (Re-			
called)	202		

INDEX.

VOLUME II.

Plaintiff's Exhibits for Identification:

Exhibit Number	Description	Page
11	Drawing of trap on property of Trum- ble of Alhambra	121

Plaintiff's Exhibits in Evidence:

Exhibit Number	Description	Page
12	Drawings of first gas trap installed on Tonner lease	160
13	Sales invoice 3/17/22	162
14	Letter Townsend to Lacy, 12/10/20	165

15	Letter Lacy to F. M. Townsend.....	164
16	Lacy drawing, Tonner trap.....	185
17	Lorraine sketch	186
18	3 prints of small working drawings....	188
19	Model	201

[120]

Page

20	Trumble trap	201
----	--------------------	-----

Defendant's Exhibits for Identification:

Exhibit Number	Description	Page
"A"—Model, Gas trap.....		207

Defendant's Exhibits in Evidence:

Exhibit Number	Description	Page
"B"—Tico gas trap, sketch.....		223

[121]

113

Los Angeles, California, Thursday,
March 23, 1922, 10 A. M.

The COURT.—Are you ready to proceed, Gentlemen?

Mr. F. S. LYON.—Yes. If your Honor please, we were unable to serve the supplemental bill on Mr. Bagg until 9:15 to-day, but it is short and I might read it to your Honor.

The COURT.—Have you read it, Mr. Bagg?

Mr. BAGG.—It was only served on me at 9:15, your Honor, and I haven't had a chance to read it over thoroughly. I know what the contents of it are, however.

The COURT.—You will not want it read over then at this time?

Mr. BAGG.—No.

The COURT.—You will want time to answer?

Mr. BAGG.—Yes; and if it is necessary for us to make a discovery we will have to have time to go over our books.

The COURT.—And may the evidence go on in the meantime?

Mr. BAGG.—Oh, yes.

Mr. LYON.—We plead in this supplemental bill that they are infringing by this new type. We plead that that is illustrated by the machine or trap which the General Petroleum Company of California purchased from the Lacy Manufacturing Company, which is manufacturing the Lorraine traps for him, one of which we now have in our possession, and that that infringes Claims 1, 2, 3 and 4 of the patent in suit. The only discovery we ask is the usual discovery when we come to an accounting as to how many like that they have made. We bank our entire supplemental bill on this trap which we have in our possession, and we will prove that it was manufactured by the defendants. Unless, therefore, on the question of the validity of the patent, or on the question of infringement, the defendant has some other or different defense on the issues of validity or infringement that he wishes to put in, I would [122] suggest that we stipulate that the answers heretofore filed stand as the answer to the supplemental bill as well, unless Mr. Bagg has some other and additional defense, and if so he can state that and we can consider the answer so amended.

Mr. BAGG.—If your Honor please, we have no

objection to trying all the issues out in this one case, as to these various types of traps that we are alleged to infringe. We are perfectly willing to have them all thrashed out. But we would like to have a little time to study this trap. Now, he has described the trap as one that was sold by the Lacy Manufacturing Company. Of course that company is not a party to this suit, and we have to investigate their records to ascertain just what the type of trap was. Counsel are probably aware of the fact that we put out a number of different types of traps. They are adapted for different kinds of wells. Different wells have different characteristics, and you must have a trap of a certain model, adjusted in a certain way, to meet the requirements of a particular well. Now, in order to ascertain just exactly what the style of trap was that was sold to the General Petroleum Company we will have to go down there and investigate with the Lacy Manufacturing Company in order to ascertain what that is. It may be this type of trap,—we do not know. But we have never had any intimation that they were going to use that, until yesterday morning when they introduced that model, and consequently we don't know just exactly what the type of trap is. Now we are perfectly willing to thrash this out right now on any type of trap. All we want to know is just exactly what the type of trap is so that we can make the proper answer.

The COURT.—Well, can you accomplish that by Monday morning?

Mr. BAGG.—Oh, yes, we can answer easily by that time.

The COURT.—The usual practice is for an accounting to be taken up as a separate matter anyway. [123]

Mr. BAGG.—Yes, I understand that, but, as I understand, the rules require that we include this in our answer.

The COURT.—Yes. .

Mr. LYON.—The only thing the answer requires now is a defense as to the validity of the patent and the denial of infringement. They can announce, under counsel's statement, that they do not contest the validity of the patent; that it is only a question of infringement. They can introduce the state of the art without pleading it. The only thing we have in that line, then, is that unless counsel has some other defense, they know what this trap is, and we are prepared to show that all we did in order to get this trap was to send an order down to the Lacy Manufacturing Company's plant where the Lorraine Gas & Oil Separator Company sold this trap for \$1,300 to us, just the same as you would go out and buy a jack-knife or any other piece of mechanism, and as far as the statement that they have made a large number of different types of trap is concerned we have no knowledge of any such condition: We are, as I say, banking this allegation of infringement by our supplemental bill solely—

The COURT.—That includes this second trap?

(Testimony of Ford W. Harris.)

Mr. LYON.—Yes; that type.

The COURT.—Well, I don't think any injury can come from allowing the defendant to file its answer Monday, and in the meantime we can go on as though the answer were filed and the issues joined.

Mr. BAGG.—Very well.

Mr. LYON.—And if we get into the defendant's case we will reserve all questions of competency of the evidence and the admissibility of it under the pleadings until the answer is filed, without argument.

The COURT.—Yes. Call your next witness.
[124]

Testimony of Ford W. Harris, for Plaintiffs (Recalled).

FORD W. HARRIS, recalled on behalf of plaintiffs, testified as follows:

Direct Examination (Resumed).

(By Mr. F. S. LYON.)

Q. Mr. Harris, you stated that you had observed this Lorraine trap that was on the Tonner lease, Well No. 3, and that it was being operated under a sustained pressure in the trap of 45 pounds. Is that correct? A. That is correct.

Q. Now, have you observed any other of the defendant's traps in operation? A. I have.

Q. Please state where they were and what the condition was with respect to such pressure on the traps.

(Testimony of Ford W. Harris.)

A. I have never seen many of the Lorraine traps. There is a trap across the road from the Tonner No. 3, on the Tonner No. 1 lease of the General Petroleum Company, and I observed that, and that was operating at a pressure of about 30 pounds. I also observed two traps on the lease of the Wonder Oil Company at Richfield; one of these traps apparently was shut down at the time and not operating and the other was operating under a pressure of your observation?

The COURT.—Those were Lorraine traps?

A. Lorraine traps. They had the Lorraine name on them. And they were constructed externally in accordance with these drawings here.

Q. (By Mr. F. S. LYON.) Is that the extent of your observation?

A. That is the whole extent of my observation of the Lorraine traps.

Q. Can you give the date, approximately, when you made those observations?

A. I made my original observations before the suit was filed, but I made additional observations last Sunday. [125]

Q. And those traps were operating under pressure as you have indicated last Sunday?

A. Yes.

Q. And what means did you ascertain were on each of those respective traps for maintaining that pressure within the trap?

A. I didn't have an opportunity—or I didn't make any very careful investigation to see what

(Testimony of Ford W. Harris.)

the means were. I presume, however, there is—

Mr. BAGG.—Well, we object to any presumption, your Honor. He says he didn't observe.

The COURT.—I think you ought to state what you saw.

A. I simply observed that the gages on the traps showed this pressure. I don't know by what means the pressure was maintained.

Q. The pressure on the trap?

A. On the trap itself.

Q. What was the pressure?

A. Why, the pressure was in some cases 30 pounds and in some cases 25. It is very difficult to read these pressures on these particular gages, because they are high-pressure gages and they read down very low on the scale. In other words, they are not gages originally designed to read small pressures. They read up to several hundred pounds, and it is somewhat guesswork to read accurately on the gages, but they all show some pressure—at least 25 pounds.

Q. (By Mr. L. S. LYON.) Did you examine a Lorraine trap at the plant of the Trumble Company in Alhambra last Saturday?

A. Yes; I have examined that trap several times.

Q. Can you state the construction of that trap?

A. I think I can. [126]

Q. Please go ahead and state fully what was done while you were present with that trap and what you observed and how it is constructed and what is its mode of operation.

(Testimony of Ford W. Harris.)

A. I visited Mr. Trumble's shop or plant at Alhambra and this trap was in his yard there standing on the ground. We had a workman take—we first pried open the top of the trap, the manhole in the top of the trap, and we were able to see the entire internal construction of the trap, due to the peculiar construction of the trap inside. We could see a central chamber, but there were two side chambers which were blocked off by metal walls that we couldn't get into. We therefore had a workman take an acetylene torch and cut a hole inside of the trap adjacent to what we assumed to be the oil inlet. Upon cutting this hole inside of the trap we found a certain form of construction which is illustrated by a model which I have here (exhibiting). This model was made by a workman in that plant to illustrate the method of construction of the trap, and I won't vouch for the dimensions of it exactly, but I will vouch for it as correctly representing the general construction of the trap. On opening the manhole in the top of the trap we saw there was a central chamber between two partitions, and we could look down in this central chamber and see two floats in there similarly placed to the floats in Fig. 4 of the Lorraine patent. We couldn't see into the side chambers because there were walls across the top of it. In one side of the trap there was a pipe going in and we cut a hole to the right of that pipe—when you are looking at that side of the trap—and we saw that that pipe went in to the interior of the trap

(Testimony of Ford W. Harris.)

and it had firmly secured thereon an elbow, this elbow being inclined at an angle of approximately 45 degrees and being ground off so that it fitted tightly against the partition—which corresponds to the [127] partition 19 of the Trumble patent. We did not at that time—we later cut another hole on the other side so that we could get a much better view of the interior of the trap.

Q. Let me interrupt you just a moment, Mr. Harris, I present to you a drawing and ask you if you know what it is.

Mr. LYON.—I will state to the Court that I will prove the accuracy of this drawing by another witness a little later.

A. This is a drawing of the trap which is on the property of Mr. Trumble at Alhambra now and which I saw last Saturday and since.

Mr. LYON.—For identification we ask that this drawing be marked Plaintiff's Exhibit No. 11.

Q. Would it not be easier for you to use a blue-print of this? A. Yes; I think so.

(Blue-print presented to witness.)

Q. Now, as you proceed please take this drawing and point out on it the different parts you refer to and explain the construction to the Court.

A. In this drawing we have three figures. The figure on the left is a cross-section through the pipe on a central plane which passes through the oil inlet; Figure 2 is an elevation taken at right angles to Figure 1; and Figure 3 is a horizontal cross-section through what may be called the gas transfer

(Testimony of Ford W. Harris.)

pipe in the top of the trap. The oil inlet pipe which appears to the right of the first figure—that is, the figure to the left in the drawing—goes into the trap at right angles to the partition, which we may call a long partition, this partition being on the right-hand side of the trap, and there being a short partition on the left-hand side of the trap. Behind [128] these partitions there is an open space in which the floats are placed, and upon taking the manhole cover off the top of the trap we were able to see down into the trap, see the floats, see the top of the left-hand and right-hand chambers and see a pipe which connected these chambers. We were unable, looking into the top of the trap, to see what was inside of these chambers since the tops of the chambers were closed by a wall.

Referring to the right-hand figure, the oil inlet pipe is shown going into the center of the trap. We cut an irregular hole to the right of that little inlet pipe so that we could look in, and we found that the oil inlet pipe went into the trap a short distance and that it had secured thereon an elbow, this elbow being turned, as shown in the right-hand figure, at an angle of approximately 45 degrees, and being cut off so that it fitted very closely against the long partition—that is to say, the partition on the right-hand side of the trap. The floats were connected by levers inside.

Q. (By the COURT.) Do you call this a float (indicating)?

(Testimony of Ford W. Harris.)

A. Yes; these are floats, and the floats are shown here in this view. They were connected by a lever to two external valves—the two valves here, and shown on the end view in this figure here. Looking at the plan view which is on the upper right-hand corner of the sheet, it will be seen that the nipple is turned to this long and short chamber connected by a short pipe extending across the trap. The gas outlet pipe is taken off the top of the trap, and is shown on the upper left-hand corner of the left-hand figure, being carried down back of the trap to a valve which is operated by the float. We later on cut another hole on the other side to give us better [129] access to the end of the trap to see how the nipple was placed and how it operated under operating conditions.

Q. Now, trace the action of the oil and the gas, and the separation of it, in this device.

Mr. BAGG.—To which questions we object for the reason that our contention is the witness is not qualified as an expert to describe the action of this oil and gas in the operation of the device.

Mr. F. S. LYON.—I just want to ask a preliminary question.

Q. You have observed a number of these similar devices in operation? A. Yes.

Q. And from your inspection of this particular trap last referred to, are you able to state how the oil and gas enter and are separated?

A. From my observation from certain experi-

(Testimony of Ford W. Harris.)

ments that I made upon the trap itself I think I can give a—

Q. (By the COURT.) How did you make those experiments?

A. By putting water through the trap to see how the water would flow through the interior of the trap.

Mr. BAGG.—We renew our objection to the testimony of this witness as to the operation of this trap for the reason that he has not qualified himself as an expert, and for the further reason that the test that he describes as having been made with water is not a competent test to show the action of oil and gas in an oil and gas trap.

Q. (By the COURT.) From your experience are you able to say what the action was?

A. I think I am; yes, sir.

The COURT.—The objection is overruled.

Mr. BAGG.—Exception.

A. Referring to the left-hand figure of this drawing, the oil and the gas enter the trap through a pipe in the top of the right-hand chamber, and being under some slight [130] pressure at least they naturally tend to follow their entering line; that is to say, they enter the trap horizontally on the central plane. If there were no elbow in the trap they would simply strike against the long partition, that is to say, the right-hand partition. The elbow being placed as it is tends to turn this oil and entrained gas, the oil and gas striking against the elbow and being turned around. Now upon putting

(Testimony of Ford W. Harris.)

the water through there we found that the water—

Mr. BAGG.—If your Honor please, we object to the water demonstration.

Q. (By the COURT.) Well, you may state your experiment there if you desire. I doubt whether the use of the water is a fair test.

A. We found that the water was strayed out over this partition and out through the elbow and being sprayed down across there; then with a very small stream of water—

Q. Well, what is your idea now as to the action of the oil?

A. I think the oil would have even a greater tendency to cling to the surface and cling to the partition because of its greater viscosity and its greater stickiness.

Q. Have you any idea why the pipe was put in there at an angle?

A. I think it was put in at an angle for the purpose of giving it a sweep and allowing it to spread around on the partition.

Q. (By Mr. LYON.) What mechanical feature in that particular elbow, if any, was there that gives you the opinion that it was intended to have the oil sprayed on to this partition and that does spray it on the partition?

A. The oil pipe entering the trap extends over toward the partition for a short distance. In other words, the elbow is not close up against the partition. It could [131] easily be. The end of the elbow which goes up against the partition is ground

(Testimony of Ford W. Harris.)

off to a knife edge so that it fits tightly against the partition and makes a close contact therewith. The lower end of the elbow forms a sort of sweeping curve that conducts the oil from over and tends to spurt it out in a very pretty form—a very efficient form—upon the partition.

Q. (By the COURT.) I wonder why that was not adjusted so that when the oil entered the whole of that . . . instead of in the pipe.

A. There is a reason for that, I think, your Honor. The gas is taken off through a connecting pipe as shown on the extreme right-hand corner of this figure and goes across into the other partition. The oil and gas being drawn away, it decreases the liability of gasoline vapors being carried away with the gas. In other words, to draw it away from the gas outlet, so that the gas can be taken out of that film and taken away on the other side.

Q. (By Mr. LYON.) Did you observe the mechanical construction of the faces of this elbow with relation to the direction of a fluid running on them?

A. The elbow is not an ordinary elbow. In other words, an ordinary elbow as you would purchase it would have the pipe threads in it because it is made for the purpose of making connection between the pipes. This elbow is very smoothly machined out to give it a flaring surface to assist in this direction of the oil over its surface and against the partition.

Q. And what was the object of running a small stream of water on that elbow?

(Testimony of Ford W. Harris.)

A. We wanted to see if the water under varying conditions and quantities would flow over that partition. We experimented by directing it in different directions in there to see that it would. It was possible by putting [132] the hose in far enough so that it wouldn't touch anything here (indicating) to have the water come through without touching the partition; in other words it didn't touch the elbow—it didn't touch the pipe. But if the water was directed against this pipe almost anywhere it invariably came out and fell down over the surface of this partition.

Q. In what form? A. In the form of a film.

Q. What was that due to?

A. That was due to the fact that the water naturally was directed toward the partition as it came in and had a certain velocity, and naturally was moving towards the partition, and this elbow didn't turn it exactly parallel to this partition but it turned it so that it struck the partition at an angle and, naturally, it adhered to the partition and flowed down over it.

Q. (By the COURT.) Wouldn't that elbow action go on—

A. No, it did not, in our experience, seem to go on. A little might flash off, but the great bulk of the oil flowed down over the partition. In our experiments we couldn't make it flow over the outer wall at all. It flowed over the partition. Now it might be, with a large supply, that some of it would go on the outer wall too. We had a garden hose.

(Testimony of Ford W. Harris.)

But being directed in this manner it not only tends to go on this partition but it is also directed towards the curved wall of the tank in case any of it gets off the partition. In other words, it is directed into that corner formed by the partition in the wall of the tank.

Q. (By Mr. LYON.) And how did the stream come out of the nipple—in the form of a column or how?

A. No; the stream came out of the nipple in the form of a sheet—not the nipple but the elbow—in the form of a [133] sheet—not the nipple but the elbow—in the form of a thin sheet. In other words, it went in in the form of a thin sheet and this thin sheet was continued over and went right on down over the partition.

Q. And then from your observation of this elbow what was it in the elbow that made it so come out in the form of a sheet rather than in a column?

A. It was the flaring of the elbow, the general shape of the elbow, the angle at which it was placed, and its relation with the entering oil. In other words, it is a very well worked out directing means for directing the oil over and spreading it out.

Q. Can you point that out on this drawing, what it is that does that?

A. Yes. The oil entering in this direction, that is to say, towards the partition, striking against that machined surface in the elbow, is simply turned and spread, and of course as it is turned it tends to spread out, and being spread it strikes on this parti-

(Testimony of Ford W. Harris.)

tion and flows down over in this thin body. I see no reason why oil would not act in exactly the same way.

Q. And you base that statement on what experience?

A. On a great deal of experience in handling oil at various times.

Q. Now in this device what means, if any, are provided for maintaining a pressure wthin the trap?

A. There are provided two valves, a gas valve and an oil valve, one of them being in the gas outlet and the other in the oil outlet, and by a suitable adjustment of these valve pressure could undoubtedly be maintained in the interior of the trap.

Q. Are those valves indicated on this drawing?

A. Yes; in all three figures of the drawing.

Q. Where? [134]

A. They are indicated in dotted lines on the left-hand figure, and near the bottom of the trap; they are indicated at the extreme right and bottom of the right-hand figure, and they are indicated in the plan view at the extreme right of the plan view which is at the upper right-hand corner of the sheet.

Q. And how, based upon your experience with such machines and with machinery in general, are those valves arranged mechanically to be operated upon this?

A. They are operated through the float and through a lever system which is not fully indicated on this drawing. So far as I can see, the arrange-

(Testimony of Ford W. Harris.)

ment for operating these valves is substantially like the other traps I have examined, with the possible exception of this independent adjustment on the gas and oil valve.

Q. And how does the operation of these valves, so far as maintaining pressure is concerned, and the discharge of oil, compare with the function and direction of the valves for these purposes in the Lorraine patent, Exhibit 3?

A. So far as I can see they are exactly similar. They are for the same purpose and operate in the same manner.

Q. And how do they compare with the valves for these purposes in the advice illustrated in the Trumble patent?

A. They are exactly similar to the two valves in the Trumble patent.

Mr. LYON.—You may inquire. Now, as I have stated to your Honor we will prove this drawing and then we will ask the court to inspect, before the close of the case, this particular device, and, if the court desires it, we will operate under actual oil.

Cross-examination.

(By Mr. BAGG.)

Q. Mr. Harris, you are a patent attorney, are you not? [135]

A. I am an attorney at law.

Q. Well, are you not a patent attorney also?

A. I am a patent attorney also.

Q. You are one of the attorneys regularly em-

(Testimony of Ford W. Harris.)
ployed by the Trumble Gas Trap Company or the plaintiffs in this case?

A. I don't know that the Trumble Gas Trap Company regularly employs an attorney. I am the attorney who got out their patent for them.

Q. Well, you are one of their attorneys in this case also, are you not?

A. I am not; no, sir.

Mr. L. S. LYON.—Will you stipulate that that trap we got last Saturday was purchased from and made by the defendant in this case? We have the driver here who delivered it, and as he is a busy man—

Mr. BAGG.—I probably will, but I don't want to until I have consulted my client.

Mr. L. S. LYON.—May we interrupt the examination of this witness, your Honor, so that we can put the driver on to testify that he took the trap out there?

The COURT.—If there is no objection to that procedure.

Mr. BAGG.—No objection, your Honor.

(Witness temporarily withdrawn.) [136]

Testimony of Thomas T. Davis, for Plaintiffs.

THOMAS T. DAVIS, called as a witness on behalf of plaintiffs, being first duly sworn, testified as follows:

Direct Examination.

(By Mr. F. S. LYON.)

Q. Your name is Thomas T. Davis?

A. Yes.

(Testimony of Thomas T. Davis.)

Q. By whom are you employed?

A. By the General Petroleum Corporation.

Q. Los Angeles, California? A. Yes, sir.

Q. Last Friday did you take a gas trap to the yard of the Trumble Company in South Alhambra?

A. Yes, sir.

Q. Where did you get that trap?

A. At the Lacy Manufacturing Company.

Q. Under whose instructions?

A. Under Mr. Foster's.

Q. Who is Mr. Foster?

A. He is my transportation foreman.

Q. Transportation foreman of the General Petroleum Company? A. Yes, sir; at Vernon.

Q. And you delivered that trap at the yard of the Trumble Company in South Alhambra?

A. I did, sir.

Q. Did you make any changes of any kind in the trap from the time of its delivery to you until you delivered it to the Trumble Company? A. No, sir.

Mr. F. S. LYON.—That is all. Any questions, Mr. Bagg?

Mr. BAGG.—No. [137]

Testimony of Ford W. Harris, for Plaintiffs (Recalled—Cross-examination).

FORD W. HARRIS recalled.

Cross-examination (Resumed).

(By Mr. BAGG.)

Q. Now, you say that you are not one of the attorneys for the Trumble Gas Trap Company?

(Testimony of Ford W. Harris.)

A. I understand that I am not an attorney of record in this case.

Q. Well, you are, however, an attorney for them in another case that is similar to this, in which Mr. Moran is bringing a suit for infringement against the Trumble Gas Trap Company, are you not?

A. I wouldn't be sure of that. Mr. Graham, my partner, is attorney in both cases, and it really is—

Q. Well, your firm name is signed to the motion in that case, is it not?

A. It is possible that I am an attorney in the other case.

Q. And while your name does not appear, probably, as one of the attorneys in this case, your partner's name does appear on this supplemental bill of complaint?

A. I may not, technically, be an attorney in this case, but for all practical purposes I am an attorney in it.

Q. And as such attorney and representative of the Trumble Gas Trap Company you went out to see this trap on the lease that you described yesterday?

A. Yes, sir.

Q. And as their attorney you examined it with a view of testifying in this case? A. Yes, sir.

Q. Now you testified yesterday that you examined the pressure gauge on that trap and found that it showed a pressure of about 45 pounds. [138]

A. Yes, sir.

Q. That would indicate, as I understand it, the interior pressure on this trap?

(Testimony of Ford W. Harris.)

A. That is as I understand it; yes.

Q. Now, you testified yesterday that there were two valves operated by a float on the interior of this separator; is that correct?

A. There are two valves on the exterior which are operated by a float on the interior.

Q. Well, yes, that is what I intended to say.

A. Yes.

Mr. F. S. LYON.—Are you referring to the Tonner trap?

Mr. BAGG.—I am referring to the one he testified to yesterday.

Q. Now, those floats are operated by the height of the oil level in this larger chamber of the Moran trap, are they not? A. They are.

Q. Did you examine the mode of operation of these valves or these floats? A. I did.

Q. I wish you would explain to the Court if you can just how these valves worked as you observed them there that day.

A. My observations were confined to certain—what you might call rather obvious experiments. There is a long lever which projects out from the trap and carries weights on its outer end. This lever could be pushed up and pulled down, the pulling down of the lever corresponding to the condition which would occur when more oil came into the trap. In other words, as the float would rise the lever would be moved down, and *vice versa*. Upon pushing up the lever—which would correspond, of course, to the diminution of oil inside the trap—the

(Testimony of Ford W. Harris.)

flow of [139] oil into the tank into which the oil was delivered would be shut off. In other words, apparently, if the oil in the trap fell below a certain level the oil valve operated by these floats would close for the purpose of allowing more oil to collect, and as soon as the oil had collected and the flow had arisen a certain distance this oil would be released into the trap. So far as I could determine by an observation of the pressure gage and by opening a little auxiliary valve the gas valve operated in the opposite manner; that is to say, the gas valve apparently would close—or would open—you might see—the gas valve operated exactly opposite to the oil valve. In other words, when the oil valve was fully closed the gas valve was fully open, and *vice versa*.

Q. Well, then that is simply due to the opening in the oil exit, and the gas exit was governed altogether by the height of the oil in the trap?

A. That is so far as the two valves which were directly mounted upon the trap and operated by the float were concerned.

Q. So that it was the oil level that governed the operation of both of those valves?

A. So far as I could determine, yes.

Q. Now, you testified that the pressure on that trap was about 45 pounds to the square inch and remained more or less constant during that time. You don't know where that gas was going, do you, at that time?

A. Well, I know it was being delivered to a cer-

(Testimony of Ford W. Harris.)

tain pipe there. I don't know where the pipe went to. The pipe went down into the ground, and I don't know where it went from there.

Q. Did you say that observed a valve on that pipe line somewhere?

A. There was a valve on that pipe line just outside the trap, but this valve really has nothing to do with [140] this particular case because it was evidently an outlet valve to allow that gas to escape to the air and had nothing to do with controlling—

Q. It was what is known as a safety valve that is required by law in these cases, is it not?

A. Well, I don't know. It was simply a manually operated valve. I think it was there for some experimental purposes. I don't see that it had anything to do with this particular case.

Q. So that the only valve you observed, then, on this trap was this valve operated by this inferior float such as you have described?

A. These were the two valves that I observed, yes.

Q. Now, suppose this gas was being carried a long distance, there would be more or less pipe line friction there, would there not? A. Why, certainly.

Q. And that would have a tendency to cause a back-pressure in the gas trap which would show on the gas gage, would it not, or the pressure gage?

A. Yes.

Q. Now, if this gas was connected up and being delivered to some absorbing plant, and they had a reduction nozzle or some other means for reducing

(Testimony of Ford W. Harris.)

the flow, that would cause a back-pressure, would it not?

Mr. F. S. LYON.—We object to that as purely hypothetical and assuming a state of facts not shown to exist.

The COURT.—This is more or less theoretical, now, is it not?

Mr. BAGG.—I am just asking that to determine whether he is an expert—whether he is qualified.

A. So far as maintaining the pressure on this trap is concerned, it is quite immaterial; that is, a pressure could be maintained either by a valve put directly at the trap or by a valve on the end of the line or perhaps by [141] a contracted opening at the end of the line, which might be an absorption plant, or where it is delivered to the boilers, or anywhere. It is not necessary, to maintain the pressure on the trap, to put the pressure-maintaining valve at the trap; it can be placed at a distance.

Q. Now, do you know whether or not there was an absorption plant connected up with this—

A. I don't know that.

Q. As a patent attorney, the fact that this gas was being delivered to an absorption plant such as was described here a few minutes ago with a restricted passage for this oil, and this restriction was placed on this gas outlet line by the company purchasing the oil or gas or using it, that would not be attributed or charged up to the instruments of the oil and gas separator, would it?

(Testimony of Ford W. Harris.)

A. Well, as a patent attorney I think I ought to leave that to the Court.

Q. Well, you are a patent attorney.

A. Well, my opinion would be this, that if this trap as originally furnished had a pressure-reducing valve on it, and the purchaser was regularly using it and operating on a plant that also had a pressure-reducing valve I would be inclined to think he would take one of those valves off and not operate both of them. In other words, if he already had a means for maintaining the pressure he would not be apt to bother to put another in there which would certainly be without any function or purpose whatever.

Q. Then you observed no pressure-reducing means at all there at that trap?

A. Well, I observed a pressure, and I assumed that since there was a pressure there must be some means of producing it.

Q. But you don't know where that was?

A. I don't know where that was.

Q. You don't know whether it was down at the absorption plant or not? [142]

A. In the very nature of things I could hardly testify to where it was, because that pipe went down into the ground, and if some man had taken me down and said, This is the valve, I couldn't testify in regard to it.

Q. Now, you have examined the valve in the Trumble trap, have you not?

A. The construction of the valves.

(Testimony of Ford W. Harris.)

Q. Yes; and the valves generally?

A. No; not with any great particularity.

Q. Now, is the operation of those valves in the Trumble traps similar to those in the Lorraine trap?

A. The operation of the two valves shown in the Trumble patent is very similar.

Q. Now, the two valves in the Trumble trap are operated independently of each other, are they not?

A. You mean in the patent?

Q. Yes; in the patent.

A. Yes; one is operated by one float and another is operated by another float.

Q. And they bear no relationship one to the other?

A. Well, they are operated in a similar manner to the Lorraine valve.

(Last question read.)

A. I think they do.

Q. You say they do?

A. I think they do; yes. They are not mechanically connected, if that is what is you mean, Mr. Bagg.

Q. And the one that governs the opening of the oil outlet is in the bottom or in the lower portion of the trap and is operated altogether by the height of oil in that particular portion? A. Yes.

Q. Now, the valve which operates the gas outlet is considerably above the float that operates the oil outlet, [143] is it not? A. Yes, sir.

Q. And, as described in the specification for the patent, that valve is put in there for the sole pur-

(Testimony of Ford W. Harris.)

pose of preventing the mixture of the oil and gas as the gas passes out into the gas line?

A. I think the patent can perhaps speak for itself. I don't know as I would want to say just what that valve was put in there for. That is a matter I have not investigated.

Q. But as a matter of fact, before the gas valve would operate in the Trumble trap the valve in the oil line would have operated to its fullest extent, would it not?

A. Well, that would depend upon the dimensions of the trap and the way it is constructed.

Q. Well, the way it is described there—

A. I think it would as it is shown in the drawings.

Q. So they don't work, then, simultaneously at all?

A. Well, of course they are both operated by the oil level. First one opens and the other closes.

Q. That is in the Trumble trap? A. Yes.

Q. Now if the oil level were to get very high then it would close the upper valve, or the gas valve?

A. Yes.

Q. But it wouldn't unless it got to a dangerous height? A. No.

Q. But in the Lorraine trap they operate—one closes and the other opens. They are practically balanced, are they not?

A. Well, the difference is merely a matter of degree.

Q. Now, just answer my question, please. As you have described it, in the Lorraine trap, as one

(Testimony of Ford W. Harris.)

valve opens the other closes. They work in perfect harmony, do they not?

A. Well, I don't think I have described it that way. [144] I said that as the oil level rose in the Lorraine trap first the oil valve opened and then the gas valve closed.

Q. You mean, then, that there is a—

A. Not necessarily.

Q. —a period of time between those?

A. There may be. It depends upon the way in which it is constructed and the way in which it is adjusted.

Q. You didn't observe, then, how these valves are constructed?

A. It is my opinion—I couldn't check it up exactly—that on that trap that I examined at the Tonner lease the gas valve had very little function—had very little to do there. I don't think that gas valve would close until the oil level in the trap was very high, just as in the Trumble.

Q. Well, it probably wouldn't close, would it, but it might be reciprocal? A. Well, yes, it might.

Q. Now, is it not a fact, Mr. Harris, that those valves there work exactly in harmony and unison; as one closes the other opens just in exactly the same proportion, and as the opposite condition occurs, why, the other closes in the same way, so that they work practically in unison one with the other, operated by the same float?

A. I don't know that I am extremely competent

(Testimony of Ford W. Harris.)

to speak on the operation of those valves. This can be said, however: In this trap which is illustrated in this blue-print the two valves are each operated by a lever and these two levers may be adjusted so that the period between the complete closing of one valve and the complete opening of the other, for example, may be made anything you like. Now the two valves are, however, connected together and operated together.

Q. In the Trumble trap there is no outlet for the gas [145] above the upper cone, is there?

A. No.

Q. So that when the oil comes into the receiving chamber—as we will call this chamber above the cone—if there is any atmosphere in there that would have a cushioning effect, or if there was any gas in there it would have a cushioning effect, which would force the flow of the oil and gas as it passed from the oil well down past the edges and between the edges of the cone and the side wall of the expansion chamber, would it not? A. I don't think so.

Q. Well, where would it go?

A. I think it would flow over that surface naturally by gravity. I don't think the atmosphere has anything to do with it.

Q. In a small space, or proportionately small, such as is illustrated here by this model you have introduced, do you mean to say that that would flow without any pressure at all, and that no pressure would accumulate in there?

A. I don't see how it could accumulate. It is in

(Testimony of Ford W. Harris.)

open communication with the entire interior of the trap.

Q. Yes, but there is no escape for either the oil or gas from that receiving chamber except as it flows down the side wall of the trap?

A. That is true.

Q. Now, if there was a considerable flow or considerable pressure in that oil line as it comes from the well wouldn't there be a large amount of pressure inside of the trap? A. Yes, sir.

Q. Now, that would have a tendency to force that, because, there being no escape for the oil and gas in any other direction that would have a tendency to force that [146] oil and gas down past the edges of this cone and between the edges of the cone and the side wall of the expansion chamber, would it not?

A. No, sir.

Q. And that pressure in there wouldn't have any effect upon that at all?

A. No, sir; because you have the same pressure below that you have above. You have to have a difference in pressure to make anything flow. As long as the entire interior of the trap is under the same pressure it doesn't make any difference to the oil how it goes. It simply tends to go in the direction of gravity. If you have a difference in pressure then it will naturally move in the direction of the pressure.

Q. Suppose your well is flowing by heads, which is, as I understand it, what we call a gusher: there would be, at the times when the oil was flowing in

(Testimony of Ford W. Harris.)

heads, an enormous pressure coming with the flow of the oil into this receiving chamber, would there not? A. Yes.

Q. There would be an enormous pressure in there? A. Yes.

Q. Now, before that pressure could be communicated to the balance of the trap it would have to pass down through past the edges of these cones and the side walls of the trap, would it not?

A. Yes; the gas and oil would both pass.

Q. And that would have a tendency to force that oil down in there, would it not?

A. Momentarily, until the pressure equalized itself.

Q. Now, in Mr. Lorraine's trap such as you have described there is no such restricted chamber in his receiving chamber, is there?

A. You mean there is no dead space in the top?

[147]

Q. Yes. A. No.

Q. There is a means by which they communicate over the top of this partition with the gas outlet and also with the oil outlet?

A. Yes, his pressures can immediately equalize themselves inside the trap.

Q. And therefore his oil never would, under any circumstances, be forced down over the side walls of this trap? A. No.

Q. It would always flow by gravity? A. Yes.

Q. In your opinion, is there ever any difference in

(Testimony of Ford W. Harris.)

pressure above the upper cone in the Trumble trap and below that cone?

A. In the event of a sudden increase in the pressure of the well or a sudden rise in the pressure of the well that rise in pressure would travel progressively through the pipe and through the trap. In other words, if your pressure was very suddenly increased in your well due to a difference in the rate of flow or a release of some formations below so that you had a sudden increase in the pressure, that increase in pressure would build up very rapidly in the pipe and in the top and bottom of the trap, but that would be an extremely momentary condition, only long enough for the gas to relieve itself.

Q. Now, is this space in the Trumble trap between the edges of the cone and the side walls of the expansion chamber, as you call it, sufficient to equalize that pressure almost immediately?

A. I think it is; yes. I don't know that I would want to testify as to that, because I really don't know what that distance is.

Q. You don't know what the distance is? [148]

A. No. Gas will go through a pretty small hole.

Q. Now, in the Lorraine trap if the well was flowing with a considerable amount of pressure and velocity coming into the receiving chamber, and if the oil and gas, as I understand,—or the oil particularly,—has to pass down the sides, as you have described it, has to pass down through this smaller chamber which is made by the partition and passes

(Testimony of Ford W. Harris.)

around under that partition and comes up on the other side, does it not?

A. The gas comes up on the other side.

Q. No; the oil. A. Yes.

Q. Some of the gas would be carried along too, would it not, and bubbled up?

A. Well, I wouldn't think very much would be carried along.

Q. Well, there would be some, though?

A. It is pretty hard to carry gas down through a body of liquid; I don't expect there would be any appreciable amount.

Q. But there might be some. A. Very little.

Q. Now, in the Lorraine trap as you observed it out there on that Tonner lease the oil level in the trap was considerably above the lower end of this partition, was it not?

A. We determined the oil levels and marked them on the sketches which are in evidence, I think.

Q. Well, you can answer that by saying that it was above it considerably, can't you?

A. Considerably above the—

Q. The lower end of this partition.

A. I was trying to see if I had some dimensions on that. I don't think we determined how far down that partition [149] extended, due to the difficulty in getting in there. We determined where the oil level was and marked the dimension on it. But the oil level was about 18 or perhaps 20 inches below the bottom of the spreader.

Q. Well, you could tell by the rivets along the

(Testimony of Ford W. Harris.)

sides about how far this partition went down, could you not?

A. Yes, we could tell, but I don't think we put any dimensions on so that I could testify as to how far that went down.

Q. Well, you can testify as to whether or not, can you?

A. I think that partition extends down into the oil.

Q. Quite a little ways? A. Yes.

Q. Now, this partition runs clear across and is solid? A. Yes.

Q. So that there is no communication between the sides of the partition and either one of the two chambers?

A. Only a communication over the top.

Q. Over the top and under the bottom?

Mr. LYON.—It is riveted to the sides, is it not?

Mr. BAGG.—Yes.

The WITNESS.—In the later traps it is not riveted,—it is welded. In this trap that is in Mr. Trumble's place now—

Q. (By Mr. BAGG.) Then the oil must go down underneath the bottom or lower portion of this partition and rise on the other side? A. Yes, sir.

Q. Now this, you say, would practically be pure oil, or oil with no gas in it?

A. Very little gas in it.

Q. And it would be considerably heavier and more compact than the oil and gas and foam as it came from the well? [150]

(Testimony of Ford W. Harris.)

A. Yes.

Q. Now, before this oil as it comes in from the oil and gas well can get down here into the other chamber it must pass around this partition?

A. Before any oil can get around?

Q. Yes.

A. Yes, sir.

Q. Now, if there was a considerable flow of oil into this trap with this space for communication between the trap—the two chambers above the partition—if there was a considerable flow of oil in there that would practically fill this chamber up, would it not, before it could get around?

A. Well, if you had enough to fill it up. I don't know how much that would be,—whether it would ever be practical in a trap.

Q. I know, but it could. There would be no pressure up here to force that down, would there, because of this communicating space up here?

A. Well, of course if your oil level got very high in that trap and you closed off your gas valve entirely you would have your full pressure of the well blowing out through the oil outlet.

Q. Yes, but suppose there was a great rush of oil or the oil was coming in in great quantities and at high velocity, with this communicating space above the partition which would enable the pressure to go on around and equalize on both sides, this could fill up in here, and probably would, away above this baffle-plate, would it not? A. No.

Q. You think not?

(Testimony of Ford W. Harris.)

A. I don't think it is probable at all; I think it is most unlikely. [151]

Q. Don't you think it is not only possible but probable that it would? A. No, I do not.

Q. That the oil and gas level in the smaller chamber would probably be away above the baffle-plate?

A. No; I don't think that condition ever occurs.

Q. Now if that would be true, then, the space between the edge of that baffle-plate and the wall of the chamber would have to be large enough to relieve that pressure?

A. It would have to be large enough to let the oil through.

Q. Now, I believe you stated that when you examined that trap there that day you reached in and felt the edge of that baffle-plate; and did you make any measurement as to how far that baffle-plate was away from the wall?

A. No. We couldn't make any measurement.

Q. But you did put your hand around there?

A. I reached my arm away down in there and felt of it.

Q. I believe you stated yesterday that you had had considerable experience in the oil and gas "game" as we call it.

A. I don't think I testified anything in regard to the gas game.

Q. Well, the oil game.

A. In the oil business I have had some experience.

Q. And that has extended over a period of how many years?

(Testimony of Ford W. Harris.)

A. Well, it has extended ever since I have been in California, about 10 years; but it was quite intensive over a period of about 3 years.

Q. The last 3 years?

A. No, the 3 years of 1918, 1920 and 1921.

Q. Now, you have seen a large number of other kinds of traps, have you not, oil and gas traps? [152]

Mr. F. S. LYON.—We object to that as not cross-examination.

Mr. BAGG.—Well, I will withdraw that. That is probably true.

Q. Do you know whether or not there are and have been for a number of years a large number of oil and gas separators on the market in different places?

Mr. F. S. LYON.—We object to that on the ground that it is not cross-examination.

Mr. BAGG.—I think probably that is correct, and I will withdraw it.

Q. You testified this morning with reference to that latest trap that you examined ,of the latest—we might possibly say the latest model trap that Mr. Lorraine is putting out. That doesn't any more than spread, as you call it, and—or spread out the oil over anything more than a small portion of this plate, does it (indicating)?

A. I would say that it spreads it over something less than half of it.

Q. All this elbow does is to deflect this flow of oil into this corner, is it not?

(Testimony of Ford W. Harris.)

A. No, that elbow not only deflects the oil but it spreads it and directs it against that partition.

Q. Well, now, the direction of that oil would be, as you stated this morning, coming almost in a straight line from the direction from which it started, would it not?

A. No, because gravity acts on it and as soon as it gets out it starts to flow.

Q. Well, if it were not for gravity it would shoot right out into this corner?

A. Yes, if you didn't have gravity.

Q. And if you had considerable pressure on there that would force it out, would it not? [153]

A. No, because the oil is partly spread before it leaves that elbow.

Q. Well, if there was a large amount of oil coming in there and coming out it would spread out, probably, but it would still shoot the greater portion of that down into that corner, would it not?

A. Well, it is not constructed so that it naturally will do that. The facts that it tends to fly out tends to relieve that pressure and at the same time tends to spread it in a film. If that were spread out as a nozzle it would tend to do that way, but being a direction elbow there I think there is very little tendency for it to do that.

Q. Well, it would work on the same principle as a shotgun, would it not?

A. I don't know, Mr. Bagg.

Q. Now, a shotgun, when it is fired, there is a large number of shot in it, and for a certain dis-

(Testimony of Ford W. Harris.)

tance as they go out of the muzzle of the gun they go practically together, but they begin to spread as soon as they leave the muzzle of the gun.

A. And fall.

Q. And begin to fall, yes, and also to go on; and after awhile they all fall to the ground in a large spray. A. Yes.

Q. Now, isn't that practically the same action as that of the oil in this case?

A. It is the action of anything that is momentarily acted upon by gravity. In other words, it tends to fall.

Q. And acted on by force?

A. Yes. The shape that that thing takes on that partition is somewhat similar to the shape of any falling body. In other words it is a sort of a trajectory curve.

Q. Well, the oil and gas coming into these various [154] traps come in either by virtue of natural pressure in the well or by pressure exerted upon them by the pumper. Is that so?

A. It is my understanding that these traps are not applied very often to pumping wells.

Q. Well, if they were applied to pumping wells they would come in in force? A. Yes.

Q. So that the oil always comes into these traps with more or less force? A. Yes, with some force.

Mr. BAGG.—That is all.

Mr. F. S. LYON.—That is all. [155]

Testimony of David G. Lorraine, for Plaintiffs.

DAVID G. LORRAINE, a witness called on behalf of the plaintiff, having been first duly sworn, testified as follows:

Direct Examination.

(By Mr. L. S. LYON.)

Q. You are the defendant in this case, are you not? A. Yes, sir.

Q. Were you served with a subpoena that you appear here with the drawings of the first trap furnished by you to the General Petroleum Company and installed on the Tonner lease at Brea?

A. Well, Mr. Lacy was.

Q. Weren't you served with a subpoena?

A. Not before I came into court; no.

Q. Well, have you been served with a subpoena at all? A. Yes, since that time.

Q. Have you that subpoena with you?

A. Yes, sir.

Q. When were you served?

A. Yesterday morning at ten o'clock (Producing subpoena).

Q. Will you produce the drawings of the first gas trap furnished by you to the General Petroleum Corporation and installed on the Tonner lease at Brea Canyon?

A. Well, after receiving the subpoena I didn't have the time to get that drawing out.

Q. When did you get the subpoena?

A. I got it yesterday after I came into court.

(Testimony of David G. Lorraine.)

Q. And you haven't had time since yesterday to get the drawing?

A. Not the correct drawing; no.

Q. Have you a drawing or a print of it?

A. Well, Mr. Lacy might have it there.

Q. Would you know if there was one here in court? [156] A. I would know it if I saw it, yes.

Q. Well, will you produce the drawing you are referring to?

A. (After examining papers with Mr. Lacy.) He doesn't happen to have it there. We can get it in about fifteen minutes. He has not the drawing of the trap that was installed on the Tonner lease, but he can get it in a short time. I didn't have time to get it from the time I received the subpoena. He made some changes in the tracing and he had to change it back again.

Q. (By the COURT.) How soon can you have it here? A. In about fifteen minutes, I believe.

Mr. BAGG.—We did have a model of that trap here.

Mr. L. S. LYON.—We would like a working drawing of it here.

Q. Have you also a working drawing of the trap that you sold to the General Petroleum Company on March 17, 1922, your order No. 23282?

A. Yes, we have that.

Q. Is that here in the courtroom?

A. Yes, that is here.

Q. Will you produce that drawing, please?

(Mr. Lacy hands drawing to witness.)

(Testimony of David G. Lorraine.)

Mr. L. S. LYON.—The drawing produced by the witness is offered in evidence as Plaintiff's Exhibit No. 12.

Q. Now, this Plaintiff's Exhibit No. 12 is not a complete working drawing, is it, Mr. Lorraine?

A. Well, it is an assembly, however.

Q. Well, you have complete working drawings of that trap, have you not?

A. We haven't any assembly, however, so that you can read it intelligently.

Q. But you have complete drawings of the trap?

A. Of different parts, yes. [157]

Q. Are those here in court?

A. Of the baffle features, that's all. You see it wouldn't have the floats in here, or the valves, or the pipe on it.

Q. What other drawings have you illustrating this trap here? Will you produce those?

A. Why, yes. Will you get that working drawing of this trap, Mr. Lacy, please? It is right in the roll there.

Mr. L. S. LYON.—Did you state, Mr. Lacy, that there were no working drawings here?

Mr. LACY.—There are no working drawings here, outside of the one drawing that you have produced there.

Q. (By Mr. L. S. LYON.) Well, you have working drawings of this trap, Exhibit 12, have you not?

A. Not anything more than that for the assembly view.

(Testimony of David G. Lorraine.)

Q. Have there never been any other drawings made? A. Only parts and pieces that is all.

Q. Well, that is all we want. Have you those drawings here? A. No, I have not.

Q. Can you produce those also?

A. That is the assembly view that we have used to assemble the trap with.

Q. Now, what drawings do you have to make the nozzle with—the elbow?

A. We have a separate drawing.

Q. You have a detail drawing, have you not?

A. Yes.

Q. We would like you to produce at two o'clock all of the drawings you have of the Tonner trap that we have been talking about, including your working drawings, and all of the drawings you have of this General Petroleum order trap, including the working drawings, and particularly the working drawing of the elbow. Can you do that? Will you agree to do that, or else we will—

A. I will try to do it; yes. That is all I can agree [158] to do.

Mr. L. S. LYON.—We would request a direction of the court that they be produced.

The COURT.—Very well; you will produce what you have, will you?

The WITNESS.—Yes.

Mr. BAGG.—Yes, your Honor, we will produce all that we have.

Mr. L. S. LYON.—Will you admit this sales invoice as being given by Mr. Lorraine in connection

(Testimony of David G. Lorraine.)

with the sale of the trap to the General Petroleum Corporation on March 17, 1922 (handing paper to counsel) ?

Mr. BAGG.—Well, I don't know why we should not. Yes.

Mr. L. S. LYON.—That is offered in evidence as Plaintiff's Exhibit No. 13, meaning the sales invoice for the trap that the dray man, Mr. Davies, this morning testified to, connecting that particular trap with the defendant.

The COURT.—Very well.

Mr. L. S. LYON.—That is all, Mr. Lorraine; and I will ask Mr. Lacy to take the stand, please. [159]

Testimony of William G. Lacy, for Plaintiffs.

WILLIAM G. LACY, called as a witness on behalf of the plaintiff, having been first duly sworn, testified as follows:

Direct Examination.

(By Mr. L. S. LYON.)

Q. With whom are you associated in business, Mr. Lacy?

A. I am employed by the Lacy Manufacturing Company.

Q. That company manufactures traps for the defendant in this case, does it not? A. Yes, sir.

Q. You have been served with a subpoena to bring in certain records in this case, have you not?

A. Yes, sir.

Q. Have you with you the original letter or a copy thereof—I mean the original letter addressed

(Testimony of William G. Lacy.)

to William Lacy, President, under date of December 10, 1920, and signed by F. M. Townsend?

A. Yes, sir.

Q. Will you produce that letter, please?

A. Here is a copy of my reply attached to it (producing papers).

Q. And you have attached to it the reply letter under date of December 14, 1920, by Mr. Lacy to F. M. Townsend. A. Yes, sir.

Mr. L. S. LYON.—The letter and reply are offered in evidence as Plaintiff's Exhibits Nos. 14 and 15.

Mr. BAGG.—Now we would like to see the letter.

The WITNESS.—Now I am removing the Lacy Manufacturing Company replies from these letters (detaching copies and handing letters to Mr. Lyon).

Mr. L. S. LYON.—The letter of December 14 produced by the witness is offered in evidence as Plaintiff's Exhibit No. 14. [160]

Mr. BAGG.—We object to the introduction of that until we know what the contents of the letter is, your Honor. I haven't seen it.

The COURT.—What is the object of introducing that letter?

Mr. L. S. LYON.—The letter is a notice of infringement, may it please the Court, written prior to the filing of the suit.

The COURT.—A notice of—

Mr. L. S. LYON.—Of the claim of infringement, written by Mr. F. M. Townsend.

(Testimony of William G. Lacy.)

Mr. BAGG.—We admit that we received notice in a letter addressed to the Lacy Manufacturing Company, which is not a party to this suit. We admitted notice to ourselves. We stipulated that in the record, so I think there is no use in introducing this, and we object to it as incompetent, irrelevant and immaterial and not bearing upon any of the issues in this case.

Mr. L. S. LYON.—We want to show that the infringement in the case is deliberate, and we want to show the reply to this letter from Mr. Lorraine's manufacturing representative received by M^r. Townsend. The letter and its reply.

Q. Have you that reply, Mr. Lacy, the letter from Mr. William Lacy dated December 14, 1920, to F. M. Townsend? You took it off of this, you say.

A. I have the copy; you would have the original. Mr. Townsend would have the copy.

Q. You have the copy of it, have you?

A. I have the copy.

Q. Can you identify this letter written you as the original, from your copy (handing letter to witness)? A. Yes; that is the original.

Mr. L. S. LYON.—The letter is offered in evidence as Plaintiff's Exhibit No. 15.

Mr. BAGG.—To which we offer the same objection, your Honor. [161]

The COURT.—Very well; I will let it go in.

Mr. L. S. LYON.—That is all.

Mr. BAGG.—That is all. [162]

Testimony of Hans K. Hyrup, for Plaintiffs.

HANS K. HYRUP called as a witness on behalf of the plaintiff, having been first duly sworn, testified as follows:

Direct Examination.

(By Mr. F. S. LYON.)

Q. What is your name? A. Hans K. Hyrup.

Q. And what is your business, Mr. Hyrup?

A. Draftsman.

Q. How long have you been a draftsman?

A. About 10 or 12 years.

Q. Do you mean by that a draftsman who makes a business of making mechanical drawings?

A. Yes.

Q. And that has been your business for the last 10 or 12 years? A. Yes.

Q. By whom are you employed?

A. I am employed by Mr. Milon J. Trumble most of the time.

Q. At his shop in Alhambra?

A. At his shop in Alhambra; yes.

Q. Were you there last Friday? A. Yes.

Q. When Mr. Davies delivered the trap that he referred to? A. Yes, I was there.

Q. What was *down* with that trap?

A. It was taken off the truck and set up in place, and after that we opened up the trap.

Q. When was it opened up?

A. It was opened up Saturday morning some time. [163]

(Testimony of Hans K. Hyrup.)

Q. In the presence of whom?

A. In the presence of quite a few of the shop employees out there.

Q. Were there any changes at all made in that trap before it was opened up at the time that—

A. No; no changes.

Q. Now since the opening up of that trap did you make any drawings of it? A. Yes.

Q. I show you Plaintiff's Exhibit No. 12. Did you make that drawing?

A. Yes, that is the drawing I made.

Q. Does that correctly show this trap according to scale?

A. Yes, as nearly correct as I could scale it.

Q. You mean as near as you could scale it and reduce the dimensions? A. Yes.

Mr. F. S. LYON.—We offer the drawing marked Plaintiff's Exhibit 12 for identification in evidence.

That is all. [164]

**Testimony of Paul Paine, for Plaintiffs,
(Recalled).**

PAUL PAINÉ, recalled as a witness on behalf of the plaintiff, testified as follows:

Direct Examination.

(By Mr. F. S. LYON.)

Q. Mr. Paine, will you examine the drawing of which the blue print, Exhibit No. 12, lying in front of you, is a copy and state whether you have ever examined the trap therein illustrated.

A. I saw a trap this morning which corresponds

(Testimony of Paul Paine.)

approximately to this. I haven't checked all the dimensions of the trap.

Q. Where did you see such trap?

A. At Alhambra in the yard of the experimental laboratory of Mr. Trumble.

Q. Did you make any particular observations of that trap?

A. I did of a portion of the top of it.

Q. What portion?

A. That portion which was visible from the outside and which was disclosed through two openings which have been cut in the side of it.

Q. Please explain to the Court where those openings were and what you observed.

A. Those openings were on that side of the trap which also contained a four inch inlet line. On the inside of the trap the oil inlet line had attached to it an elbow setting to which was attached a bell-shaped continuation of the elbow. I take it that this is the oil inlet portion of the trap (indicating). The oil inlet at the outside of the trap comprises a piece of four inch pipe welded to the trap and carried through. The extension [165] in the bell-shaped portion for the delivery of the oil has a diameter of eight inches at its terminus. This flare or bell-shaped extension bears on one side against the vertical baffle-plate; its other edge is at a distance of about two and a half inches from the inside of the trap, making the distance from the baffle to the edge of the trap a total of about ten and a half inches.

(Testimony of Paul Paine.)

The bell-shaped extension has an incline of about 32 degrees from the horizontal.

Q. Based upon your experience with these oil and gas separators and your knowledge of the flow of oil therein and of oil wells as heretofore stated by you, state what the progress of the intermingled oil and gas would be in this trap to which you have last referred?

A. The major tendency of the fluid, the mixture of oil and gas passing in there, would be to take the form of a sheet on the lower portion for the oil, and throughout the entire volume of the bell-shaped affair for the gas as it passes out of this bell, and to impinge against the baffle-plate and spread out over it as it descends in the trap.

Now, the degree to which that would extend would, in great measure, depend upon the proportions—the amounts—of oil and gas present, whether in small quantity or whether in large quantity.

Q. And as a mechanic what do you understand, then, is the purpose in the device of this nipple or elbow and its particular shape and the fact that it is brought into contact on the edge against the edge of the partition or wall?

A. Well, I would judge that to be for the purpose of causing oil to spread out over the baffle-plate in its descent.

Mr. F. S. LYON.—You may inquire. [166]

Cross-examination.

(By Mr. BAGG.)

Q. The character or proportion of that stream as

(Testimony of Paul Paine.)

it comes out of this elbow would be determined in a large measure by the force with which it was driven from the oil well or driven through this pipe?

A. The character of the stream would depend upon the capacity of the well to produce oil and gas; that is, its volume depends entirely upon what the well is producing.

Q. Well, suppose you had a gas well or an oil well that is flowing, we will say, with 200 pounds pressure, that would drive a stream of oil through this inlet pipe at a very high velocity, would it not?

A. That would depend entirely upon how fast it is moving; but as the film of oil, there are two factors involved there—the quantity of gas and the quantity of oil.

Q. Well, we will say just what we call the foam as it comes from the oil and gas well, and say with a pressure of 200 pounds, that would force this foam through this pipe at a very rapid rate, would it not?

A. I am unable to answer that until you tell me what you mean by foam because I have never thought of the production from a well in terms of foam.

Q. Well, that is the way it is described here in Mr. Trumble's patent. I don't know any more about that than you do, and probably not so much, but that is the way it is described in his patent, as a foam. Now if that was in the form of a foam, coming up from the oil well at a pressure of 200 pounds, that would shoot through here at a very rapid rate, would it not?

(Testimony of Paul Paine.)

A. I am unable to say how fast it would shoot.

Q. Well, pretty rapid? [167]

A. Because—it would be in motion. Now, if by foam is meant the spray of oil there, then there would be a possible division of the fluid coming from the well into the three classes of a solid body of liquid—which, of course, in response to the law of gravity would pass along the lower portion of the containing medium—and the spray, which would be in a condition of agitation above the surface of the liquid, and the gas, which is entirely about that. But through the fact that these are all moving with some degree of rapidly they are to a great extent intermingled.

Q. And they would go through here at a rapid rate?

A. Well, rapid, of course, is a comparative term.

Q. I understand, but I couldn't tell you just exactly—

A. Well, they are in very active motion.

Q. Now, the way in which this oil and gas comes out of this elbow would be well determined by the rapidity or speed at which it travels as by the character of the fluid coming out, would it not?

A. Both of those factors would influence it.

Q. I see, one as well as the other.

A. Yes, sir.

Q. And if it were coming out at a very rapid rate and composed practically of oil and gas in a foamy form the chances are there wouldn't be much spreading over this baffle-plate, would there?

(Testimony of Paul Paine.)

A. It is possible in a discharge line to have two conditions there. By restricting the size of the opening one obtains the effect of a nozzle, of making it come out in a more direct line and with a greater piercing effect; on the other hand, if it is desired to slow down the motion and spread the fluid over a wider area the means to accomplish that would be to enlarge the opening at its discharge point. [168]

Q. But it would have a tendency if it was coming in there at a very rapid rate and in the form of a foam to shoot that off into this corner here rather than to have it flow down the side of that wall, would it not?

A. Yes, but of course the tendency would be reduced through the agency of the bell-shape as compared with the effect it would have if the pipe had been continued in the original diameter that it had at the point where it entered the trap.

Q. Well, you have examined the gas trap that you have just described and the form of that elbow and the bell shape exit of it, and you would say that in that trap if that came as you saw it and examined it there—if that oil and gas in a foam-like form came through there at a very rapid rate it would have a tendency to shoot this oil and gas, the whole stream, into this corner over here instead of having it spread out over that plate to any considerable extent? A. No.

Q. You would not say that? A. No.

Q. You would say, then, it would spread over regardless of the amount of speed with which it

(Testimony of Paul Paine.)

came in there—you would say it would spread over there practically the same regardless of that speed?

A. No.

Q. Well, then what would you say?

A. I would say that the tendency for the fluid, of course, is to move in the direction of the aperture, in that direction; but for the large proportion of it to go over to the corner of the trap, I wouldn't say that that would be the result; that my judgment would be that it would spread over a considerable portion of the baffle-plate, [169] depending to no small degree upon the angle of inclination of that discharge opening as well as the extent to which that bell-shaped affair is flared out.

Q. Well, I am asking you to just describe it from the trap that you examined out there this morning, that bell shape and all, just under the same circumstances and the same trap that you examined this morning.

A. My judgment would be that the tendency in the trap I saw this morning would be for the fluid to spread over half of the baffle-plate.

Q. Regardless of the speed at which it was coming? A. No.

Q. And regardless of the character of the oil—whether it was oil or gas, and large proportions of gas, or a large proportion of oil?

A. It would make a difference.

Q. Then the speed would have a tendency to restrict that amount of surface on the baffle-plate than increase it, would it not?

(Testimony of Paul Paine.)

A. A greater speed would have a tendency to throw a greater volume of oil over towards the corner of the trap. Now there are two influences acting upon the body of fluid that comes into the trap—or on the body of liquid coming into the trap: one is the diversion over to the side of the trap caused by the angle of inclination of this bell-shaped affair; the second influence is the action of gravity which is pulling the oil down. Now, the extent to which those two will act upon each other will depend, in the major fact, on the speed with which that liquid enters the trap. If the liquid comes in at a high rate of speed a greater portion of that will be diverted to the side of the trap, and of course a high rate of speed assumes a large volume of liquid. Now if the liquid is coming in in smaller quantity [170] the major influence upon it will be that of gravity which is pulling the oil down, and in that case the oil will not go so far over to the side of the trap.

Q. Then the speed does have a tendency to restrict the amount of space that the oil flows over on this baffle-plate, does it not?

A. It has a tendency to determine the proportion of oil which goes over to one side of the baffle-plate.

Mr. BAGG.—That is all. [171]

Testimony of William C. Rae, for Plaintiffs.

WILLIAM C. RAE, a witness called on behalf of the plaintiff, having been first duly sworn, testified as follows:

Direct Examination.

(By Mr. F. S. LYON.)

Q. Please state your name, age, residence and occupation.

A. William C. Rae; age, 50; Oak Knoll Circle, Pasadena; Sales Manager for the Trumble Gas Company.

Q. Have you ever observed in operation any of the defendant Lorraine's gas traps?

A. Yes, sir, I have.

Q. Please state where and approximately when, and what, if any, pressures you observed, and how you determined such pressures as were maintained within such traps.

A. The first trap I saw was on well No. 5 of the Tonner lease of the General Petroleum Company, the one you are discussing here.

Q. That is the one Mr. Harris spoke of?

A. Yes, that was running between 40 and 50 pounds pressure when it was first started and until it was connected up with the absorption plant when they had to maintain a pressure of about 27 pounds, I understand, and that registered on the gauge. That was the gasoline pressure to the absorption plant. But for many days before that they had run at 40 to 45 pounds.

(Testimony of William C. Rae.)

Q. (By Mr. BAGG.) You say you understood that. That is what someone told you?

A. That is so. The superintendent who operated the trap and who sends the gas to the compressor plant says that is the line pressure. [172]

Q. He told you that?

A. He told me that; and I saw with my own eyes that that trap had from 27 to 30 pounds. You couldn't tell definitely. They told me the line pressure was 27.

Mr. BAGG.—We object to that, your Honor.

The COURT.—Yes; that is hearsay.

Q. (By Mr. LYON.) How did you see with your own eyes that it had 27 pounds?

A. Well, the high pressure gauge he uses is about 300 pounds, and it is pretty hard to definitely tell within one or two pounds what he has on there. I can give you a reading for that later on if you want it.

Q. And according to your reading of that gauge what was the pressure?

A. Between 27 and 30 pounds.

Q. Now proceed with your other—

A. On Tonner No. 1 re-drilled well there was a test made of it. That trap had been working at different times at from 30 to 40 pounds. I never saw the gauge beyond 40 pounds. I haven't seen it now for about a month or a little more than a month.

Q. Well, you did observe that gauge?

A. I saw that gauge at the time it was installed.

(Testimony of William C. Rae.)

Q. And you did observe it at 40.

A. At 40 yes. At the start, yes.

Q. And at what other pressure did you observe it?

A. On a well at Hugo, No. 1 or 2, I don't just recall, but I think it was Hugo No. 1, the gauge showed no pressure. Said it was run without pressure. That was also a high pressure gauge. We knew that oil—or at least my service man would tell me—

Mr. BAGG.—Now we object to what the service man told him. [173]

A. All right, then, I know that that gas or oil, liquid, cannot be lifted without pressure. My company bought, and I had placed on the gas line, a pressure gauge, and that pressure gauge, an oil pressure gauge, showed 6 pounds, which lifted the oil 12 feet into the shipping tank. That also occurred on another Tonner well, but they say—the Lorraine people said there was no pressure on it. I went out to prove to my own satisfaction that I could see with that pressure gauge, and it did have a pressure to move it into the shipping tank.

Q. In other words, these high pressure gauges would not register at as low a pressure—

A. It didn't register anything; the needle was blank. The 30 pound gauge showed 6 pounds.

Q. Well, what other pressure?

A. On the Stearns, No. 4, I think, of the General Petroleum Company, that showed no pressure. We put the small gauge on that and it showed two and a half pounds.

Q. What other pressure?

(Testimony of William C. Rae.)

A. I have not observed the pressures down at Long Beach nor Huntington Beach. I have seen a good many of these traps—

Q. Do you know what the gas pressures of those wells are, any of them? A. No, I don't know.

Q. Have you observed the pressure of any other wells that had gas traps put out by the Lorraine Manufacturing Company?

A. I have not observed the pressure on them.

Mr. LYON.—That is all.

(A recess was thereupon taken until 2:00 o'clock P. M.) [174]

AFTERNOON SESSION—2:00 o'clock.

The COURT.—You may proceed with the testimony.

Testimony of William C. Rae, for Plaintiffs (Recalled).

WILLIAM C. RAE, recalled.

Cross-examination.

(By Mr. BAGG.)

Q. Mr. Rae, you testified before lunch with reference to those various pressures on those traps.

A. Yes.

Q. I wish you would give me the pressure on each one of those traps that you have described. The first was on Tonner No. 3.

A. There were two pressures on that trap when I saw it at two different times—a pressure of between 40 and 45 in December, 1920; and later on, I should say perhaps three or four weeks, or around that, at

(Testimony of William C. Rae.)

any rate within the next month, it was reduced to between 27 and 30, the gas line pressure on the lease.

Q. That was indicated by the pressure gage on the Lorraine trap? A. As I saw it; yes, sir.

Q. Now what was the next one you saw?

A. Well, I can take— Q. Well, I don't care which one you take next.

A. Well, call it Tonner No. 1. That was last summer, in July or August. Around 40 pounds was the working pressure there for some time.

Q. And you never saw that again?

A. I have seen the trap quite often, but I have never looked at the gage. [175]

Q. That is the only time you looked at the gage?

A. Well, I saw it maybe a dozen times during three or four weeks test that was made there.

Q. And it averaged about 40 pounds?

A. 40 down to 27. When they got that down there they had to run it to the same pressure as they do all of the line pressures on that line.

Q. Now the next one was what?

A. Hugo No. 1 at Richfield.

Q. And what was the pressure in that?

A. It didn't show any pressure. I told you afterwards we had a 30-pound pressure gage on it afterwards, and it showed six pounds. That is the one we put on, on the gas line.

Q. Now, what is the next one?

A. On Stearns No. 4.

Q. And what was the pressure in that?

(Testimony of William C. Rae.)

A. No pressure on their gage. It registered two and a half pounds on the gage.

Q. Now what was the next one?

A. I have seen quite a number of them that I didn't—

Q. Now those are those four traps.

A. They are the specific traps that I paid a great deal of attention to. That was in the early part of the game when they came in.

Q. This was one of your gages that you put on this trap?

A. One that belonged to the Trumble Gas Trap Company, yes. I didn't put it on; it was our service manager that put it on.

Q. You couldn't vouch absolutely for the accuracy of that gage? A. I could not. [176]

Mr. BAGG.—That is all.

Q. (By Mr. LYON.) Do you know whether the pressure of gas from an oil well remains constant after the well has been in production for some time?

Mr. BAGG.—Now, I object to that because I don't think he has shown that he knows enough about oil wells to testify on that line.

Mr. LYON.—That is the question I asked him, if he knows.

A. I don't know.

Mr. LYON.—That is all.

Mr. BAGG.—That is all. [177]

**Testimony of David G. Lorraine, for Plaintiffs
(Recalled).**

DAVID G. LORRAINE, recalled on behalf of plaintiffs.

Direct Examination (Resumed).

(By Mr. LYON.)

Q. Have you with you those drawings in regard to that Tonner trap?

A. Why, the drawings, Mr. Lacy tells me, the original drawings he is unable to find. They have been removed from the shop in some way. But we have a sketch there of the construction just as it was made, and we have another drawing here that hasn't the dimensions on it. It is an assembly view, but it was drawn true to scale.

Q. Now this assembly; is that a correct scale drawing?

A. Well, it is, with the exception of this right here (indicating). That should be two inches, and that measures up there one and a half inches.

Q. What is that?

A. That is that deflector?

Q. You say it should be two inches from the wall but in this drawing it is one and a half inches?

A. One and a half inches. Outside of that this is all true to scale.

Q. Now, who made this drawing?

A. Walter Lacy of the Lacy Manufacturing Company.

Q. Under your direction?

(Testimony of David G. Lorraine.)

A. Well, he copied it, but—

Q. When was it made?

A. I think the date is on here, isn't it? It was made after the trap went out.

Q. Was it made after the filing of this suit?

A. I believe it was, yes. But that sketch was made before the filing of the suit, that Mr. Graham has there. [178]

Mr. L. S. LYON.—We offer the print referred to by the witness as Plaintiff's Exhibit No. 16.

Q. Now, this sketch which you have produced, by whom was it made?

A. I sketched that myself.

Q. When was that made?

A. That was made prior to the filing of the suit.

Q. Well, was it made before the Tonner trap was put on or not? A. Yes.

Q. Before the Tonner trap was made?

A. Yes.

Q. How long before?

A. Oh, I should say a month.

Q. Was the Tonner trap made from this sketch? Were the drawings for the Tonner trap made from the dimensions on this sketch? A. Yes, sir.

Q. Now, I notice that the baffle-plate, there seems to have been some crosses on it as if you were going to take it out or remove it. The rest of the sketch is in ink, but those marks are in pencil. What was the purpose of those, and when were they put on?

(Testimony of David G. Lorraine.)

A. I don't know anything about these pencil marks. I haven't seen this for a year—over a year and a half.

Q. It would indicate as if *some* somebody was contemplating moving that over and taking it out, would it not?

A. Why, possibly. I couldn't say. I am no mind-reader as to that.

Q. Well, where has the sketch been since you made it?

A. Mr. Lacy brought it up from the factory just now.

Q. And the dimensions that are on the sketch are [179] correct, are they, and in accordance with the way the trap was actually made?

A. Well, I wouldn't say exactly. All I know about it is this here baffle-sheet.

Q. That is the only dimension that you know whether it is right or wrong?

A. Well, the size of the shell on that, and the position of the float-iron.

Q. When were those dimensions put on it?

A. Before the trap was constructed.

Mr. L. S. LYON.—This sketch is offered in evidence as Plaintiff's Exhibit No. 17.

Q. Was this sketch, Exhibit 17, made before or after you made the working drawings for the Tonner trap? A. Before.

Q. Was the Tonner trap the first trap you ever built? A. No, sir.

(Testimony of David G. Lorraine.)

Q. Had you ever built any traps before you made this sketch? A. Several.

Q. Several traps?

A. Yes; but not of that model.

Q. Is the Tonner trap the first one you ever made in the model that is drawn in that sketch?

A. Yes, sir.

Q. I show you three photostat or photographic prints and ask you to examine those and see if you ever have seen them before (handing same to witness). Not the prints, but the drawings of which these are photographs.

A. Yes, sir, I have seen these before.

Q. What are they?

A. Well, this shell here, and these dimensions on [180] this sketch here were never used to build a trap.

Q. Well, these are photographs of your drawings, are they not? A. Yes, sir.

Q. And what were those drawings made from?

A. Well, they were made to build a gas trap but it was changed to this sketch, this part of the shell and the baffle, before we started to construct the trap.

Q. Then these are photographs of the working drawings that you state you are unable to find, are they? A. No, they are not, exactly.

Q. But they are photographs of small working drawings? A. Yes, sir.

Q. And when were those working drawings made?

(Testimony of David G. Lorraine.)

Q. Well, the date should be on those. I couldn't say exactly.

Q. Were they made before the Tonner trap was made?

A. Oh, yes. They were drawn the fourth month, third day, 1919.

Q. And when was the Tonner trap made?

A. Why, it was made some time in 1920, I believe.

Mr. L. S. LYON.—These three prints are offered in evidence as one exhibit—Exhibit No. 18.

Q. Now, were you able to produce the working drawing of this spreader or elbow that is used in the General Petroleum trap? A. The last one?

Q. Yes.

A. Mr. Lacy there says he couldn't get it. He went down after it.

Q. Well, you have that, haven't you?

A. No, he said he couldn't get it. He said he didn't have any down there. [181]

Q. Did you ever make any working drawings of that spreader, the elbow? A. I have not; no.

Q. Have any of them ever been made?

A. Well, we just simply bought that already made.

Q. Who did you buy it from?

A. Why, Mr. Lacy, I guess could say where it was bought.

Q. Well, after the purchase there was some machine work done on it, was there not?

(Testimony of David G. Lorraine.)

A. Just simply to cut the threads out of it, that is all.

Q. Whose idea was it as to the cutting out of those threads and how they were to be cut out?

A. That was mine.

Q. And who did you give the instructions to as to how the spreader was to be cut?

A. To the shop superintendent.

Q. And did you give him any sketches as to how it was to be done? A. No.

Q. What did you say to him?

A. Why, I just simply told him to take the threads out so that they wouldn't cut the oil flowing through there. To machine the threads out.

Q. And that is all you said? A. Yes.

Q. And you haven't any drawing as to how it was to be done at all?

A. No, not as yet. We are going to have a drawing made.

Q. What were you going to have a drawing made for?

A. Why, to show an assembly view of all the parts.

Q. Did you tell them to bell that separator out the [182] way it has been described by the witnesses?

A. I told them not to leave a sharp edge on it. It was immaterial how they would do it.

Q. Well, did you tell them to bell it out?

A. No, I didn't say bell it out.

Q. What did you say?

(Testimony of David G. Lorraine.)

A. I told them not to leave any sharp edge there so that it would obstruct the flow of the oil.

Q. Well, now, did you tell him anything else? First you told him not to cut the threads out; now you say you told him not to leave any sharp edge. Did you say anything else at all?

A. Why, I never used any such word as belling it out.

Q. Well, then what did you say?

A. I told him to take the threads all out of there so that it wouldn't obstruct the flow of the oil—to machine it out.

Q. And that is all you said? A. That is all.

Q. You didn't say anything about a sharp edge?

A. Oh, no.

Q. What?

A. No. Never mentioned the words sharp edge.

Q. Now, how long ago was that?

A. Well, I couldn't say the exact day. Perhaps two months ago.

Q. How many of them have been made of that kind?

A. How many L's or how many traps?

Q. How many L's have been machined out for traps?

A. About 36. About that. I wouldn't say exactly, because we are making them every day.

Q. Are they all exactly the same?

A. Approximately, yes.

Q. And do you know what operations are gone

(Testimony of David G. Lorraine.)
through in [183] machining and shaping that spreader or L?

A. Why, the L is put into a lathe and they simply put a tool in the holder, and now I believe they are buying those L's without any threads in them.

Q. Now do they do anything to them?

A. Yes, there is a little groove left there to cut threads in and you cut that right out.

Q. And they bell them out, do they?

A. Yes, they bell them out.

Mr. L. S. LYON.—That is all.

Mr. BAGG.—That is all. [184]

Testimony of Milon J. Trumble, for Plaintiffs.

MILON J. TRUMBLE, called as a witness on behalf of the plaintiff, having been first duly sworn, testified as follows:

Direct Examination.

(By Mr. F. S. LYON.)

Q. Please state your name.

A. Milon J. Trumble.

Q. Where do you reside?

A. No. 100 North Stoneman Avenue, Alhambra, California.

Q. You are one of the plaintiffs in this case?

A. Yes, sir.

Q. And the Milon J. Trumble to whom, together with the other plaintiffs, the patent in suit was issued? A. Yes, sir.

Q. Now, have you ever had any experience in

(Testimony of Milon J. Trumble.)
the manufacture, installation or use of gas traps
embodying your invention of the patent in suit?

A. I have.

Q. Did you ever observe the oil in such a trap?

A. I have.

Q. Please explain to us how you secured an opportunity to observe the flow of oil in such trap and what you observed.

A. I helped to install a trap on the McGinley lease at Montebello, and it was on what they call a head well; it flowed by heads; and after the main was installed we hadn't put the main head plate on and I had the oil turned into the trap several times to see what turn it would take in its course down the trap. This oil flowed in as a dead oil; there was no gas in it at that time. The trap was 200 feet away from the well, and was set up about 20 feet so that the oil would come out in the pipe and come up and go into the trap, so that I could see very plainly [185] the course of the oil, because the gas was not flowing through to interfere with it. The oil came into the trap and went down in the interior in a film. You could see it rolling in places, traveling down, just flowing down the interior of the trap. I could see perhaps three-quarters of the diameter of the trap.

Q. Have you examined the Lorraine gas trap which was delivered at your shop in South Alhambra last Friday? A. I have.

Q. Have you examined that carefully so as to

(Testimony of Milon J. Trumble.)

be able to state what would be the course of the oil in the use of such a trap? A. Yes, sir.

Q. Have you made any experiments to demonstrate such flow? A. I have.

Q. When did you make such experiments?

A. This morning, with oil.

Q. (By the COURT.) With dead oil?

A. With dead oil, that is, oil without gas mingled with it to spray it. It just simply flowed in slow and curved over and ran down; no gas with it.

Q. (By Mr. LYON.) Will you please now state what, in that experiment, you did, and what you observed of that Lorraine trap?

Mr. BAGG.—We object to this because of the fact that he has not testified that this experiment was conducted with oil and gas such as comes from the well, and I take it that your Honor will see that there is a considerable amount of difference between the foam composed of oil, gas, water and sand, a substantial difference, both in its action and in its general make-up, from the dead oil that he describes as having flowed through this trap. [186]

The COURT.—I heard you say that you were prepared to make an experiment in court.

Mr. F. S. LYON.—I don't know how much gas we can artificially put into the oil, but we can show your Honor the oil and the manner in which it operates. I think that so far as the evidence shows in this case to date it is entirely an assumption to say that the action would be any different

(Testimony of Milon J. Trumble.)

with the balanced pressures of gas in the trap and the intermingled gas.

Mr. LYON.—Mr. Trumble, from your experience with these gas traps are you able to state whether there would, in that regard, be any material difference between what you have referred to as dead oil and oil which contained a material amount of gas that comes from the well?

Mr. BAGG.—I think we will object to that, if the Court please. It is not shown that he is an expert in the matter or experienced in the matter of dealing with and handling oil as it comes—

The COURT.—Have you had any experience in that line?

The WITNESS.—I started in the oil fields in 1903 and I put in a good deal of my time in the developing of oil, drilling and with pick and shovel, too.

Q. Have you had occasion to observe the action of oil as you have denominated “dead oil” as it comes from the well in the foam?

A. I have, yes. The dead oil would flow along on the lower side of—

Q. I asked you if you had any experience in that line. Oh, you say you have? A. Yes.

Q. Then proceed?

A. The dead oil would flow along in a stream or body on the lower side of the pipe and would run down whichever way [187] it was deflected, and if it was mixed with oil or oil was mixed with gas, it would come in more of a spray and would whirl

(Testimony of Milon J. Trumble.)

the spray in the way it was deflected. Oil mixed with gas of course is better and travels very rapidly on account of being what we term a live oil.

Mr. LYON.—Then please explain to us this experiment that you made this morning with this Lorraine trap, what that showed with the dead oil, and how based upon your knowledge and observation of the action of the intermingling of oil and gas as it is delivered from a well, that would be in this Lorraine trap.

The COURT.—You insist upon the objection, do you?

Mr. BAGG.—Yes, sir.

The COURT.—I am inclined to hear this, because the Court would like to hear it.

Mr. BAGG.—Very well. We will withdraw our objection.

A. The dead oil as it comes into this trap flows in as I say in a quite slow stream in the lower side of the pipe. In this particular trap we have up there there is a four inch nipple that goes into the trap on this ell drawn out to a feather edge, cone-shaped, that sits up against a partition on which the ell has been ground off so it sits right against the partition pipe, and on this experiment out there the oil comes in slow and just takes the gravity and hits the baffle-plate and runs down a thin film.

The COURT.—That is the dead oil?

A. That is the dead oil. Now if it was live oil that comes in and was coming in it would go up

(Testimony of Milon J. Trumble.)

there and spread in a white fluid and pass down the plate only in a wider spray, that is the only difference.

Mr. LYON.—Mr. Paine was out there to that trap this morning, wasn't he?

A. Yes, sir. [188]

Q. Now, was it after Mr. Paine left that you made this experiment? A. It was.

Q. Mr. Harris wasn't there when you made that experiment? A. No, he was not.

Mr. LYON.—That is all. You may take the witness,—just a moment, I want to ask one question for the purpose of the record. You are prepared to reproduce that experiment to show the court, are you? A. Yes, sir.

Q. In the presence of counsel?

A. Yes, sir.

Q. And are all equipped for it, if desired?

A. Yes, sir.

Cross-examination.

(By Mr. BAGG.)

Q. Mr. Trumble, you testified that when you observed the action of your trap that you had the manhole off or the top off, or something of that kind? A. The manhole plate.

Q. There was not any gas in that hole then, was there?

A. No, sir; it was a dead oil because we opened it while it was dead in the pipe; that is it didn't contain gas and oil, it flowed in until the gas came in there and then we had to flow some of it back.

(Testimony of Milon J. Trumble.)

Q. Did you have your velocity reducing means of that well at that time? A. No, sir.

Q. Was that the oil as it came directly from the well? A. Yes, sir.

Q. It came in under pressure, did it?

A. Yes, sir.

Q. How much pressure?

A. The pressure on the well would go up to about 300 pounds I think before the well would head, start to flow.

Q. But there was no gas in that?

A. Not while we let it into the trap, not at this test, this particular test.

Q. So it just flowed in there quietly, then?

A. Yes, sir.

Q. Now, you didn't have an opportunity to observe how it acted on the side walls of the shell as you call it, after it passed off at the top of the cone or over the edge of the cone, did you?

A. I could see the oil coming down and around in the trap in a film, practically even—it seemed to be evenly divided over the surface.

Q. Over the surface of the trap? A. Yes.

Q. How could you see that?

A. I could look in through the manhole.

Q. Where was the manhole?

A. On the side of the trap nearer the bottom, nearer the cone-shaped bottom.

Q. Looking up that way? A. Yes.

Q. Now you never conducted any experiment with the Lorraine [189] with oil and gas and water and

(Testimony of Milon J. Trumble.)

sand in such a condition as it comes from the ordinary oil and gas well, did you?

A. I never carried on any experiments of those kind.

Q. The only experiments you made was simply putting oil into this trap or into this inlet and watching how it acted when it got out, as it came out of that elbow?

A. We pumped it up through an inch and a half pipe and it just filled this four inch elbow up and turned and ran over smooth and quiet. It was not a capacity of four inch or nowhere near it. It was a small pipe leading in there and it was sealed on the outside, and when we filled it to a level it ran over then and hit this curved cone, ran over the baffle-plate and ran down.

Q. Just a small stream of oil was all?

A. Yes, sir, it didn't matter. We had a valve there so it could be tested down to the size of your finger or a little larger stream.

Q. You didn't test it with anything like the capacity of the requirements that an oil and gas well would put on a trap?

A. I tested it first to the capacity of this pipe. The more oil we let in the more the spray was spread out in a film; the greater velocity the more the spray was spread out in the film and ran down the plate.

Q. Now there was no force upon this any more than just the natural gravity flow after it got up to this pipe?

(Testimony of Milon J. Trumble.)

A. No, we handled it with a centrifugal pipe.

Q. It then flowed up as it filled up this pipe and then flowed over? A. And flowed over.

Mr. BAGG.—That is all.

Mr. LYON.—The plaintiff rests. I want to offer in evidence before resting, however, this model which has been [190] used more visually than anything else.

Mr. BAGG.—If your Honor please, we object to the introduction of that because there has been no showing that that is constructed according to the dimensions of or drawn—constructed according to scale to show the dimensions of the original oil and gas trap.

The COURT.—Didn't somebody testify to that?

Mr. LYON.—Yes, he said it was substantially in accordance as nearly as he could get it. That is correct, isn't it, Mr. Harris? Mr. Harris is here.

The Witness HARRIS.—Yes.

The COURT.—Very well, it will be received.

The CLERK.—This will be 19.

Mr. LYON.—That is the Lorraine 1922 trap. Now I also have here an illustration that we have been using of the Trumble trap, simply for visualization and it might be made part of the record.

Mr. BAGG.—No objection.

Mr. LYON.—I offer that as exhibit 20.

The CLERK.—Exhibit 20.

Mr. LYON.—The plaintiff rests.

The COURT.—Has this been offered?

(Testimony of David G. Lorraine.)

Mr. LYON.—The first one was offered and accepted as Exhibit 10.

The COURT.—This one here (indicating).

Mr. LYON.—Yes. That is all.

Mr. BAGG.—Would your Honor give us about a 10 minute recess?

The COURT.—Yes, the Court will take a recess for 10 minutes.

(After recess.) [191]

DEFENSE.

Testimony of David G. Lorraine, for Defendant.

DAVID G. LORRAINE, called as a witness on behalf of the defendant, having been previously sworn, testified as follows:

The CLERK.—He has already been sworn.

Direct Examination.

(By Mr. BAGG.)

Q. You are the same David G. Lorraine who testified a few moments ago? A. Yes, sir.

Q. You are the defendant in this case?

A. Yes, sir.

Q. And are the designer and patentee of the Lorraine gas trap? A. Yes, sir.

Q. How long have you been in the oil and gas business?

A. Well, I haven't been steadily employed in the oil and gas industry, but I have been in and out of it since '96.

(Testimony of David G. Lorraine.)

Q. How much of that time have you been actively in the industry?

A. Well, I would say about 15 years.

Q. Do you understand the action of oil and gas separators and traps?

A. I do, a good many of them.

Q. I will ask you to state to the Court what is the principle upon which all of these oil and gas separators is based?

Mr. LYON.—One moment. We object to that as leading and suggesting and assuming a fact not appearing the evidence, that they all operate upon some one principle. [192]

The COURT.—Well, he has asked to explain the principle. I will hear the answer.

Mr. BAGG.—Read the question.

(The last question is read by the reporter.)

A. The principal operation, your Honor, of separating gas and oil is to reduce the velocity in a receptacle and to prevent the oil from going into the gas line, and to put all into a storage tank, a shipping tank so that there is no gas goes in with the oil into the tank and no oil goes with the gas into the gas line. And the principal way that is done in all types of gas separators is through a velocity-reducing means, in other words the oil is stopped for a certain period of time, and in a good many cases there is a certain amount of pressure put on to that oil for a certain period of time and in other cases there is no pressure upon that oil, but we must stop a certain volume of it for a cer-

(Testimony of David G. Lorraine.)

tain length of time in order to allow the oil to settle, to a settled state, and to allow the gas to come clean off of the oil, to rise to the top. That is the principle that they all work upon.

Q. Just be seated, Mr. Lorraine. Now, I wish you would state to the Court how in passing oil and gas as they come from the oil well, the gasoline or lighter hydro-carbons in the oil is made to remain in the oil after passing through the oil and gas separator, if you know?

Mr. LYON.—Now, we object to that upon the grounds that it is incompetent, no foundation laid, the witness not having qualified to answer the question.

The COURT.—I will hear the answer.

Mr. LYON.—That goes pretty heavily into chemistry.

The COURT.—Goes as I understand to the different elements of hydro-carbon in the oil.

Mr. BAGG.—Yes, sir, that is what is called the lighter contents or such as was testified to by Mr. Paine when he testified as to these, that the higher gravity oil first came off of the Trumble trap.
[193]

The COURT.—Very well, I will hear the answer.

Mr. LYON.—Our objection is that the witness has not qualified, your Honor, on that phase of the case either by education or otherwise, in the chemistry of oils, in that regard.

The COURT.—Well, I will hear the witness until it appears that he is disqualified.

(Testimony of David G. Lorraine.)

A. I have made several tests in raising the gravity of oil in different types of gas traps, and I have found by carrying a certain volume of oil under a certain pressure for a certain period of time, regardless of how that oil flows into that trap or regardless of how it flows out, it will raise the same gravity, raise up the same gravity on the trap regardless of how it is made, on all devices or traps. That is a well-known fact and has been known for years. You don't have to spread it, don't have to baffle it in any way—just hold a certain pressure there and the oil absorbs the gasoline and the traps take off the dry gas, and if you take the pressure down on the trap, why, you get a wet gas. That takes place in all types of traps.

The COURT.—What do you mean by "wet gas"?

A. Well, gas that contains more gasoline in the gas.

Q. The result is that what we call hydro-carbons?

A. Yes, the lighter hydro-carbons.

The COURT.—Very well.

Mr. BAGG.—Then as I understand it from your testimony, if you want to retain the gasoline content or lighter hydro-carbons in the oil, you subject the oil while in the trap to a pressure?

Mr. LYON.—Now, wait a moment. We object to that as leading and suggestive.

The COURT.—How is that?

Mr. LYON.—We object to that as leading and suggestive.

Mr. BAGG.—Well, I am just getting at— [194]

(Testimony of David G. Lorraine.)

The COURT.—I think it is a little leading, but I will hear the answer.

A. Well, that is a system and it is well known and been known for a long time. If you put a pressure upon the traps while the oil and gas is flowing through the trap providing the gas contains a gasoline content. All gas that comes off from oil from all wells is not alike. For instance, it will run as high as three or four gallons to the thousand, while other gasses will only run as low as one per cent and five per cent. By putting this pressure on the oil as it goes through the trap it depends upon the volume of oil carried and the pressure carried whether you squeeze the gasoline content into the oil or whether you take the *gass of* at zero.

Mr. BAGG.—Now, then, if you desire to use the gas for the purpose of making what is called casing-head gas or extracting gasoline from it, *who* process do you use?

A. Why, they reduce the pressure down as low as possible. There is a rule.

The COURT.—That allows the gas to escape?

A. No, they get the gasoline then in the gas, and you take that in the extraction plant or the absorption plant, and you take the gasoline out of the gas there; and whether you use this for fuel or put it into a gas company's line like Mr. Paine spoke of here yesterday, it is desirable to get the dry gas as they only use it for fuel purposes, and then it raises the gravity of oil and raises the value

(Testimony of David G. Lorraine.)

of the oil, but in nine cases out of ten if you put a high pressure on to a gas trap, why you retard the production of the well. In a good many cases they think they are saving money, and they are losing money, in other words. The most desirable feature about a gas trap is to take the gas and oil and separate it and not put any back pressure on the well, that is to keep it down as low as possible.

[195]

Mr. BAGG.—Now, in coming down to the trap that you installed at the Tonner lease, and which was described as the gas trap on Well No. 3, I will ask you to state to the Court or describe to the Court just exactly how that oil and gas separator was constructed?

A. Well, I can do it better from the model we had.

Q. Very well, if you have that model. I hand you herewith what purports to be a model of your oil and gas separator. I will ask the clerk to identify it as Defendant's Exhibit "A."

The COURT.—"A" for identification.

Mr. BAGG.—Now, will you explain to the Court, how that is constructed?

Mr. LYON.—Without an opportunity to examine this, without any foundation, of course, we will have to object to it. We will have to object to it on the ground there is no foundation laid.

Mr. BAGG.—Well, is that a model drawn practically to dimensions of the oil and gas separator installed on the Tonner lease at Well No. 3?

(Testimony of David G. Lorraine.)

Mr. LYON.—One moment. We object to that as leading and suggestive, your Honor. I don't like to be captious but the witness already testified that they have lost those drawings and they have nothing to make this from but memory. And I notice there is an exaggeration in the model already and I don't know how much more there is, and I would like to have it strictly proven, unless it is being used simply as a general illustration.

The COURT.—Who made that model?

The WITNESS.—Why, it was made according to my instructions.

Q. Is that made in accordance with the plans and specifications of the drawings that were originally adopted for [196] the purpose of constructing it?

A. Why yes, the whole principle is right here of the separating. As far as the baffle features are concerned they are identical. You can go up there and take it out and see the separator, the baffle feature. The float has fallen down in there, you will notice, but this baffle feature here, that is just exactly the same.

The COURT.—Very well. The Court will permit it.

The WITNESS.—The oil—

The COURT.—Set it up there on the table. I will see what I want.

A. The oil flows through here, through this pipe coming from the well (indicating), which as a rule consists of froth and foam, or foam and froth; it is divided here into two streams. The oil gravi-

(Testimony of David G. Lorraine.)

tates down through here. This is not a sealed top in any way; this don't come over the top here (indicating). It gravitates down here on each side. It is not forced down there in no thin film. The edge of the baffle to the wall is two inches.

Q. The baffle is two inches from the wall?

A. Yes, it is two inches and all the oil forced through. The oil comes up around this vertical partition and goes out here through this pipe here to the valve and the gas comes up through the top above this partition (indicating). That is all there is to the operation of that.

Q. How do you keep your pressure there is it is not sealed up at the top?

A. Well, what I mean it is not sealed over here, this separator chamber like the Trumble (indicating). The gas has a free exit at the top and the oil gravitates down. The difference between the Trumble trap and my separator is this: The oil and gas are forced down below this cone (indicating), from the pumping pressure or the flowing pressure [197] from the well, while my oil is allowed to gravitate down and the gas goes upwardly and up through this pipe (indicating).

Q. Well, the gas goes up in the other, doesn't it?

A. In the Trumble?

Q. Yes.

A. The gas and oil in the Trumble is forced down below this cone (indicating).

Q. I know. The gas goes up when it comes in the oil?

(Testimony of David G. Lorraine.)

A. Yes, you are correct there. It is all forced downwardly while my gas goes up and the oil goes down. You see the gas comes up from the top (indicating).

Q. I see.

A. And the oil gravitates down and deposits the sand and water at the bottom, and then the oil goes out of this outlet here (indicating).

Mr. BAGG.—Talk louder, Mr. Lorraine, so the stenographer can get you.

A. That there is practically the same only it hasn't got the large opening here (indicating). That would force some of the gas perhaps down below this here baffle-plate. If there was only that small—

The COURT.—Got a large space there?

A. Got a large space in the trap for the gas to go over the top. That is all the difference as far as that goes. That is constructed on the same lines. You see that the force forces the gas through the oil while ours goes up of its own volition. In this the gas would go up (indicating) and in that the oil would go down (indicating).

Mr. BAGG.—Now, Mr. Lorraine, just right there, when this gas and oil get in this trap and flow down through the pipe, before it strikes the baffle, describe to the Court what action or direction it takes before it strikes this baffle?

A. Here (indicating)? [198]

Q. Yes, sir.

(Testimony of David G. Lorraine.)

A. Why, it goes out in a divided stream, puts a stream out on each side.

Q. Go on and describe to the Court anything further.

A. This here in most cases on this side of this here partition (indicating), the oil is much higher than it is on the other side, because there is always a steady head still up here of oil and this froth or foam being lighter it is much higher here (indicating); it is just simply a settling process there. This here (indicating), if the well is flowing or pumping at all, that is filled with foam, this here chamber here, and gravitates down there and it holds the oil there and the gas goes upwards off of the top. The principal object in baffling the oil in my device is to prevent the oil from being stirred up with the water and to have it settle; it is not to run the oil down the side walls of the receptacle, to have any gasoline content squeezed into the oil. With the Trumble the oil and all the gas do come down below that cone there and that there action is positive, of course. I don't know whether that raises the gravity there or whether it raises it down there (indicating), but what I do know is that you can take any receptacle, the same size, retain the same pressure on it and the same amount of water for the same time, and your oil will be of this same gravity, because I have already tried it out here in the fields without the baffles.

The COURT.—What do you mean by "gravity"?

A. Why, as Mr. Paine was explaining yesterday,

(Testimony of David G. Lorraine.)

in order to raise the gravity of oil you put the pressure on the trap as the oil and gas passes through the trap, and of course it increases the value of the oil by raising the gravity.

Q. When that oil comes out it has a raised gravity? [199]

A. It makes a lighter oil and there is more gasoline squeezed into the oil. Of course, that is not desirable when you take the gasoline extraction plant; where they are using it for fuel purposes why, that is undesirable, because dry gas is just as good for fuel as the wet gas, and perhaps better.

Mr. BAGG.—On that trap that is installed on Well No. 3 on the Tonner Lease. I will ask you to state if there is any pressure-maintaining means used by you on that trap?

A. There is nothing—

Mr. LYON.—Wait a minute. We object to counsel leading witness. We don't think he ought to put the words in the mouth of the witness all the time. He hasn't even attempted to explain that device in full, your Honor.

The COURT.—Well, you can explain what if any pressure is maintained there and if so, how?

A. There is nothing connected with the trap that would maintain any pressure on a thin film of oil or on the receptacle. If we go to discharge the oil up in the tank, discharge it up, say higher than the tank, there is a pressure put on to the tank to discharge that oil up into that tank. There is

(Testimony of David G. Lorraine.)

a pressure put on the trap I should say, just enough pressure put there to discharge the oil. If the gas line is blocked in any way, for instance you have a small line, why of course it would build up a pressure, the friction on the line would do it; but as far as being a pressure means to sustain, to maintain a pressure upon the trap, there is nothing connected with it that would do it. This trap will handle a thousand barrels of oil and a million feet of gas with less than one pound pressure. I have done it out here with the Standard Oil Company and done it with the Shell Company. There is nothing there to maintain the pressure. The action of these valves that control this [200] separator is much different from anything that was ever constructed or invented before. They are both automatic; there is an automatic valve on the gas line and there is an automatic line on the oil discharge line. They leave the same sized opening at all times wherever they are set after they are once set; they don't hold any concrete pressure on the trap at all. We merely keep the oil level at one place in the trap. That is the purpose and that is the way they are, in every type of trap where the oil runs from the bottom to the top of the trap, that is most of them do. This acts different. The oil practically stays in one place in the trap, and that is what these valves are for to prevent the oil from going into the gas line or to prevent the gas from going out with the oil. It takes care of itself automatically. They can put a back pres-

(Testimony of David G. Lorraine.)

sure on the gas line and it doesn't make any difference; they can put a gas pressure on the oil line and it doesn't make any difference. The trap will take care of itself automatically, and this is the only trap that is constructed to-day in California I am sure that will do that.

Mr. BAGG.—I will ask you to state if there has ever been any pressure—well, that might be objected to as leading. What do you know about the pressure on this trap during its operation out there on this Tonner lease?

A. Well, when the absorption plant was taking the gas they had 55 pounds pressure on the whole line and also on the trap at one time that I know just as was stated here by one of the witnesses, but when they turned the gas loose why it just put enough pressure on the trap to put the oil into the storage tank, and they never touched the trap.

Q. And if anybody put that pressure on this trap—

A. We simply turn the gas into the gas line that went to the absorption plant and the absorption plant put the gas pressure on the line. [201]

Q. Was there any part or parcel of your trap that had anything to do with that pressure?

A. Absolutely not, because when we turned the pressure down—turned the gas out, the pressure went right down in the trap.

Q. Now, you say you have been in the oil industry more or less since '96?

A. More or less, yes.

(Testimony of David G. Lorraine.)

Q. And during that time you spent about 15 years in the oil industry?

A. I think so, just about.

Q. During that time have you had occasion to examine other oil and gas separators and traps?

A. Yes, I have.

Q. What, if any had you had occasion to examine?

Mr. LYON.—Wait a minute. May I ask what the purpose is of the examination?

Mr. BAGG.—The purpose, if your Honor please, is to show, ultimately to show that this baffle arrangement, the throwing of oil against the side walls of a trap or against a baffle-plate is old and it has been in use for years.

Mr. LYON.—Objected to as inadmissible under the pleadings. There is no defense of prior use and no defense of anything of the kind. The only defensive remark in the answer to the main suit is as follows, "And no defense of prior use or invalidity of the patent by anticipation is provable therefor."

Mr. BAGG.—If your Honor please, I will explain to the gentlemen, we are not attempting to show anticipation; we are simply showing, introducing this for the purpose of showing the state of the art, and we have a right to show that under the general showing. The gentleman conceded that in his argument yesterday about our filing an answer, by his supplemental plea here, conceded that we had a right under the [202] general is-

(Testimony of David G. Lorraine.)

sue to show the state of the art. We have plenty of authority to show that and we have a right to do that.

The COURT.—Well, I will overrule the objection.

Mr. LYON.—The testimony is received for the purpose of the state of the art?

Mr. BAGG.—That is all we expect.

Mr. LYON.—All right.

The WITNESS.—What was the question?

(Last question is read by the reporter.)

A. Well, I have examined numerous types of traps. My first experience with a trap was in Holgate, Ohio. It was nothing but a piece of pipe, and naturally I wanted to know what that trap was made like and one day I took it apart to see just what it was made like. It was nothing but a piece of pipe and there was an oil outlet, an oil inlet, an oil outlet and a gas outlet. That is what is called here in California a derrick. It is made out of casting, and you stand it up alongside of a derrick. They are built much larger here. And since that time I have built quite a few traps myself from different pipe, different models, and then the Tico, the Fisher trap, the Sharpenburg trap—

Mr. LYON.—Wait a moment. Your Honor, I think the witness ought to be required to give the actual dates of these things before he goes into them, for a large number of what he has already mentioned—at least one I noticed—are subsequent to our invention, and it is not the state of the art to show things which happened afterwards.

(Testimony of David G. Lorraine.)

Mr. BAGG.—We will admit that. Now, when was it that you examined this trap that you have just described?

A. In 1896.

Q. In 1896. Now then you mentioned the Tico trap. When did you have occasion to examine that?

A. Well, that was in Houston, Texas, or near Houston, Texas, Humble, Texas, near Houston, about 14 miles from [203] Houston. That was in 1905, in March, I believe.

Q. Now, state to the Court what the interior construction of that trap was?

A. Well, as near as I can remember it had an outlet at the bottom of the trap, and it had either three or four inlets at the top of the trap. They were connected to one pipe and they put the oil down the side walls of the trap.

Q. Now just describe to the Court—

A. I could make a sketch.

Q. Make a sketch upon that piece of paper now just showing the type of the trap and the inlet.

Mr. LYON.—I would like to ask the witness a question as to his competency in that regard, if I may?

The COURT.—Yes.

Mr. LYON.—In that Tico trap, Mr. Lorraine, that you say you saw near Humble.

A. It was in Humble; it was near Houston.

Q. Did you use that trap yourself?

A. No, I didn't.

Q. You saw it standing there under operation?

(Testimony of David G. Lorraine.)

A. No, I saw it when they put this trap together.

Q. Just explain fully what knowledge you have of it yourself?

A. Well, I was very much interested in the construction of it and I was not working there but I watched them put this trap up and I watched it operate.

Q. Did you assist in building it in any way?

A. No, sir, I did not.

Q. Have you any record of any kind that was made at the time that will show the construction of it?

A. No, I have not. I take it all from memory.

Q. What opportunity did you have for the measurements on the inside of the trap or its construction at that time? [204]

A. I had no opportunity only my own judgment.

Mr. LYON.—We object on the ground that the witness is not qualified.

The COURT.—I will overrule the objection.

Mr. BAGG.—Proceed, Mr. Lorraine, to make that drawing showing the interior of the trap.

A. (Drawing on paper.) This trap had an oil inlet in the top like this—either three or four of these, I wouldn't say which, around the top that spread the oil like that around the surface, and the oil discharged from the bottom and the gas out of the top in this manner (illustrating).

Q. Now, describe to the Court how the oil came in there and what the effect of it was.

A. Well, it splashed down the side wall here

(Testimony of David G. Lorraine.)

just the same as ours did, in order to prevent it from stirring at the bottom.

Q. Well, what would you say, from your experience as a builder of oil and gas traps and the workings thereof, was the effect of these several inlets constructed as you have described them? Describe them so that the stenographer can tell.

A. In order to reduce the velocity of the flow and at the same time spread the oil upon the side walls of the receptacle, to prevent it from foaming, to keep the foam from going into the gas line, that was the object of that baffle system.

Q. Now, how were those inlets constructed, so that the stenographer—the record will show a description, how they are constructed or were constructed.

A. Well, there was nothing but a pipe that was flanged in there and an elbow.

Q. Which way did the elbow turn? [205]

A. Turned toward the side wall.

Q. So the oil was discharged in which direction?

A. Toward the vertical wall. The oil would flow down and the gas would go up.

Q. Now, where was the gas taken off from?

A. Right in the top, as near as I can remember right at the center.

Q. That was the exit for the gas?

A. Yes, and the oil outlet was on the extreme bottom, and this set on a frame like this (illustrating).

Q. Now, what if any construction or structure

(Testimony of David G. Lorraine.)

was there in the interior of this trap to regulate the flow of oil and gas from the trap, if any?

A. Well, they used—at first on that trap they used a common ordinary gate valve to prevent that there trap from overflowing, and the float controlled the oil discharge valve.

The COURT.—What is that, the float?

A. The float, a vertical float controlled the oil discharge valve, and at first they used a common ordinary gate valve and the gas-discharge valve pinched it down a little and then afterwards they put in a glove valve, filed off the stem and put a weight across the stem and used it as a back pressure valve. That is how that trap—

Q. Now then, on the interior of this trap, describe to the Court now just the action of the oil and the gas after it got got into the trap?

A. Well—

Mr. LYON, Jr.—I don't believe the witness has shown he ever saw the inside of the trap work, if your Honor please. He hasn't testified to that. He said he stood around and watched them put it up.

The COURT.—I think he has made an explanation of it already that those flanges there was for the purpose of causing the oil to come down the side of the walls of the trap, and they made several of those intakes distributed around the traps so that the several intakes, as the oil came in it [206] would be distributed around the walls.

Mr. BAGG.—Yes, sir. Now, describe to the

(Testimony of David G. Lorraine.)

Court the action now after this oil got in here with reference to where the gas was taken off, and not from the trap but the interior, where did the gas separate from the oil, if you know?

A. Why, according to my judgment it separated from the oil as it come in here (indicating), and also some gas come off of the oil when it was in the bottom of the trap. This trap didn't seem to carry much oil. It had a gauge-glass here on one side and sometimes the oil would show in the glass and sometimes it wouldn't.

Mr. BAGG.—Now if your Honor please. I would like to have the clerk mark this Defendant's Exhibit "B."

The CLERK.—Defendant's Exhibit "B."

Mr. BAGG.—And we wish at this time to introduce that in evidence.

The COURT.—You say that was in 1905 when you saw this?

A. Yes, sir, it was in March, 1905.

Mr. LYON.—We object if the Court please to this exhibit on the same grounds. He has stated that it is only offered for the purpose of showing the state of the art, and that will be understood.

Mr. BAGG.—Yes, that is correct.

The COURT.—Yes.

Mr. LYON.—And we object generally to the exhibit on the ground that it is incompetent, not the best evidence, no foundation laid for the introduction of secondary evidence and incompetent, no foundation laid—not proven.

(Testimony of David G. Lorraine.)

The COURT.—The objection will be overruled.

Mr. LYON.—Note an exception.

Mr. BAGG.—What other traps, Mr. Lorraine, have you had occasion to examine other than the one, the Tico trap which you have just described?

A. Well, I examined the Brown trap. [207]

Q. You examined the Brown trap. When did you examine that?

A. The first Brown trap I seen was on what they called the K. T. & O. property near Taft, was in about 1915. It was an old trap.

Mr. LYON.—Wait a moment. We object on the ground that it is obvious that the witness' knowledge of that trap was subsequent to the date even of the filing of the application for the patent in suit.

The COURT.—When was that application?

Mr. LYON.—The application was filed in November, 1914.

The COURT.—And was issued in 1918.

Mr. LYON.—Yes, but the file-wrapper shows the date of the application. I think I have quoted it correctly, November 14th, 1914, so anything that he knows after at least November 14th is incompetent.

The COURT.—I think the objection will be well taken.

Mr. BAGG.—Yes, sir, we concede that. Prior to November 14, 1914, had you had occasion to examine any other traps than the ones you have described—the Tico trap?

(Testimony of David G. Lorraine.)

A. Well, I seen other traps. I seen the Cullum trap and the Washington trap, and I only observed them from their outside, not from their interior, but after that date of course I examined them.

Q. You examined them after that date?

A. Yes.

Q. Well, was the trap that you examined subsequent to November 14th, 1914, we will say—what did you call it, the Cullum trap?

A. The Cullum trap, yes.

Q. What can you say with reference to that being the same character of a trap as the trap you saw prior to that date?

Mr. LYON.—That is objected to as incompetent, no foundation [208] laid, calling for a mere guess and conclusion of the witness.

The COURT.—I think it is apparent from his own testimony that he couldn't testify to that because he didn't see the inside of that at all.

Mr. BAGG.—What other traps if any did you examine the workings of?

A. The McLaughlin traps.

Q. The McLaughlin traps. Was that prior to November 14th, 1914?

A. No, it was not. I seen them before that time but I never examined them.

Q. You never examined them until afterwards?

A. Until afterwards.

Q. You can't testify that the one you examined was like the one that you saw prior to that time?

Mr. LYON.—We object to that.

(Testimony of David G. Lorraine.)

A. No, I couldn't.

Mr. BAGG.—Mr. Lorraine, taking this model trap which has been introduced as model trap on the Tonner lease No. 3, I will ask you to state if you know where the level of the oil and gas would be in this trap during its operation in what was known as, what we might call the receiving chamber or the smaller chamber which contains a baffle-plate, as to whether or not it would be above or below the baffle-plate?

A. Well, that depends upon the flow and the volume of oil and gas that is coming into the receptacle, as the oil level varies on this side of this partition when it doesn't vary on the other side of the partition. If the oil should come in a little faster why it would build up here, sometimes build right up to the top and go over the top.

Q. I will ask you how you know that.

A. I drilled in here, not only in the Tonner trap but other traps and put cocks in here. [209]

Q. And what was the result when you opened those cocks?

A. Why, there was times there was a cock in there with a 5 inch nipple on it. That was all 5 inches deep.

Q. Where?

A. Right here, right by this baffle, right under the baffle here.

The COURT.—Under the baffle or over it?

A. In under it, right in this position, right here, just in under it (indicating).

(Testimony of David G. Lorraine.)

Q. I don't understand that.

A. Well, your Honor, this shell was tapped and drilled through here, and this here pipe was screwed in there (indicating).

Q. I understand that, but I don't understand why it should be piled up underneath but not above?

A. It was piled up above also. It shows that there was oil below there and also above.

Q. So that pile ran clear up? A. Yes, sir.

The COURT.—Oh, then, I understand you.

Mr. BAGG.—Now, Mr. Lorraine, I will ask you to state how many traps like the one you have just described as being located on the Tonner lease No. 3 you put out or built? A. Just one.

Q. After you had put that one out what did you do with reference to other models?

A. Why, we took this baffle out entirely, and I think Mr. Lacy there has the record. He can tell just how many we built without that baffle in there at all, but we still had this incoming baffle like that, but we didn't have this here deflector on the bottom (indicating).

Q. That is, you mean to say you didn't have this baffle at all or do you mean to say that it was not—

A. We used this vertical partition the same, just the same, but we abandoned the use of this baffle here and just [210] used this divider in the top.

Q. And there was no baffle there, they all struck nothing, then, after passing out of here (indicating)? A. No, sir.

(Testimony of David G. Lorraine.)

Q. After it passed out here it struck nothing?

A. Well, it may be some of it shot over this way with a big gas force (indicating).

Q. But it just dropped down? A. Yes.

Q. Now, why did you change from that form with the baffle-plate to the form without the baffle-plate?

A. Well, we found there were several reasons. We already decided not to use this baffle as we found that it was no good in there in that position as it held the oil up too high here (indicating). As soon as I installed the trap and put the trap into operation why I told Mr. Burrows and Mr. Swope that I wished that that baffle was out of there as it held the oil up too high on that side of the vertical partition.

Q. And you took it out?

A. Not that one. We left that one in.

The COURT.—That was held up because the space between the baffle-plate and the oil was not large enough to let the oil pass through, was that the reason for it?

A. Well, that might have been possible, but then it shot the froth and the foam, some of it over the top, and we had to carry out oil level too low on this side to make a complete separation of the oil when the oil reached the storage tank.

Q. Well the baffle-plate in there was the cause of the oil shooting over the top?

A. That was it.

(Testimony of David G. Lorraine.)

Q. Caused it to pile up there and it didn't have room to pass down by the wall, is that it? [211]

A. Well, yes, it held up the froth.

Q. I see.

A. I would say that is the reason, yes, sir.

The COURT.—I see.

Mr. BAGG.—Now, what are the dimensions of that smaller chamber into which the oil and gas comes as it comes from the well?

A. The dimensions of this here is $11\frac{3}{4}$ inches I believe from this sheet to this wall (indicating).

Q. From the outside wall?

A. No, from the interior wall to the sheet would be $11\frac{3}{4}$ inches.

The COURT.—That is in the trap that you built?

A. Yes, sir. This baffle-plate here is 2 inches from the wall (indicating).

Mr. BAGG.—All the way down?

A. Yes, there is an area there of about 64 inches in the slot that comes down here (indicating).

Q. That well down there where you installed this trap upon the Tonner lease No. 3, what was the capacity of that well, if you know?

A. When we put the trap on it it was about 1200 barrels and about one million feet of gas.

The COURT.—A day? A. Yes, sir.

Mr. BAGG.—What was the size of that inlet pipe? A. Three inches.

Q. Now—

The COURT.—Did you pass that all through the tank, or, I mean, through the trap?

(Testimony of David G. Lorraine.)

A. Oh, yes, yes.

Q. Twelve— A. 1200 barrels.

Q. A day through that trap? [212]

A. Twenty-four hours, yes, sir. We have one trap that is handling 1800 barrels and about two million feet of gas, at Bolsa Chico.

Q. Same sized trap?

A. Same sized trap; yes, sir.

The COURT.—Very well.

Mr. BAGG.—Do you know what the pressure was on that well?

A. Why, the pressure for tubing I believe, was around about 200 pounds, that is on the inside of the flow nipple; the pressure at the top was about 55 pounds. That was regulated by the absorption plant.

The COURT.—You say at the trap or in the trap?

A. The pressure in the trap was about 55 pounds, but that was held back by the absorption plant. It was not taking the gas away fast enough so as to relieve the pressure.

Mr. BAGG.—Now, state whether or not, if you know, the flow from that well was constant formerly, or did the well flow in a head?

A. It flowed very steadily after we put this separator on it.

Q. I am speaking about formerly, before the separator was put on?

A. No, it flowed in heads.

Q. And after the separator was put on it?

(Testimony of David G. Lorraine.)

A. Flowed steadily.

Q. Flowed steadily. Now then, coming down to the last model which was described as having been sold to the General Petroleum Company, I will ask you to describe if you can how that trap is constructed (indicating)?

A. Why, I guess that there is about it, right there, from what I can see (indicating).

Mr. LYON, Jr.—Let the record show that the witness is [213] taking hold of and refers to Plaintiff's Exhibit—

Mr. LYON.—That is all right. Let us get the number, Mr. Lorraine. 19.

The WITNESS.—This here is setting a little closer to this wall (indicating), that is all the difference in this here. This elbow here, this is a common, ordinary reducing elbow that was bought I believe from the Pacific Supply Company by Mr. Lacy. It is from four inches to six inches. That is where the oil comes in at (indicating); that is the oil intake, and the oil goes down in this direction in a downwardly direction, and the gas passes through this channel over to this chamber (indicating); and this is a scrubbing chamber to clean the gas. The gas comes below that there partition and then out through this gas outlet here. As far as the valves are concerned they are just the same and this partition is just the same as the other trap. All the valves and all the mechanism hasn't been changed, but this baffling feature on the latest models has been changed and the height of the trap

(Testimony of David G. Lorraine.)

has been changed. The trap is a little bit longer, 18 inches.

Mr. BAGG.—Now, in the construction of an oil and gas separator what, if you know, is the most acceptable plan of construction with reference to the distance of the oil and gas exit from the oil and gas intake?

A. If I understand that question right, the question is where the oil comes in at and where the oil goes out?

Q. No, what is the most approved construction with reference to the distance between them?

Mr. LYON.—We object to that as a mere hypothetical question. There is no foundation laid that there is an approved or accepted distance.

The COURT.—You may state what you know about it.

A. Well, the way I built this separator was to make the gas travel as far as possible in the separator, to clean [214] itself, from the place where the oil and gas come into the trap, and also to make the oil travel a greater distance by allowing it to flow downwardly. This partition is not long enough here—and then deposit the sand and water in the bottom of the trap and then go for a distance upwardly to give the oil a longer distance to travel and give the gas a longer distance to travel.

The COURT.—How far would it travel there?

A. Well, if this partition comes down here a little lower it is something more like this one here

(Testimony of David G. Lorraine.)
and travels down this way (indicating), and then goes over to the outside.

Q. And goes out on the other side?

A. Yes, travels straight across; on our later models it travels straight across—it makes the oil travel a greater distance.

Q. That is on a principle that water will seek its level?

A. Exactly. The gas travels a greater distance to get to the outlet and that gives a chance to store the crude oil up.

Q. That is all to facilitate the separation of the gas from the oil?

A. That is it, in order to get the gas clean.

The COURT.—I understood that was the purpose of the instrument all the way through, from the beginning of this case.

Mr. BAGG.—You have heard the testimony of the witness Paine and the witness Harris in this case with reference to the character of the flow of this oil and gas in this trap after it leaves this T; I will ask you to state to the court what you know concerning the character of the flow as to whether or not it spreads out in a thin film on this baffle-plate, or whether it has a tendency to thicken and be more than a thin film? [215]

Mr. LYON.—Wait a moment. We object to the form of the question, your Honor, on the ground that the question involves mental reservation and is too indefinite and uncertain. The use of "thin" is a relative term. If the witness—

(Testimony of David G. Lorraine.)

Mr. BAGG.—Well, I will ask him to state how thick of any the oil will be on that baffle-plate, if he knows, under ordinary pressure?

A. In order to get oil—

Mr. LYON.—We object upon the ground that the witness is not qualified to answer the question.

The COURT.—I will hear the testimony. The witness appears to be an expert along that line.

A. In order to get oil or gas from an oil well into one of these gas traps it is either pumped in there or forced in there violently—it doesn't creep in there like a caterpillar—and then gravitate down—it must be pumped up there or it must flow in there with its own natural force; and there is only one way that oil and gas can come out of this unless you let it pour down there from a little bucket or pitcher, or something like that, or pump it up there real slow with not an oil well pump but a pump that you control by hand. There is only way that that can come out of there and you can take that out of there and put it on any well and that is in a round form. This oil and gas is composed of foam, just as Mr. Trumble says in his patent there and that reducing elbow will bring it out in a round form. As far as being a thin film on here it is impossible, or any kind of a film. You may put a stream down here, but the object of that is to keep stirring up the water and the sand from the oil so the oil will settle (indicating). The whole purpose of the construction of this trap (indicating), is to prevent any stirring action and to get the oil into a settled form

(Testimony of David G. Lorraine.)

so that the oil will stop and not lose any of [216] its gases. That is what makes this thing a good seller. It gets the gas clean. There is only one way that you can possibly bring that out of that round hole if there was any pressure there at all and that would be in that round form, the shape of that ell. If that was flat why it would bring it out into a thin film, or if it was conical and hit the side walls like that over there it would bring it down in a thin film, it would press right down there, but being that there is an elbow, why, this oil and gas can only fit that form, providing the oil has got gas in with it.

The COURT.—That is to say, after leaving it in the pipe it will spread out and expand in every direction until the elbow—

A. Why, it couldn't do anything else.

Q. I am asking for the facts and not arguing the question with you.

A. Yes. You see if you fill that, if there was two ounces of pressure on that there elbow would be filled all around with that two ounces of pressure. If there was one ounce of pressure on it it would be filled.

Q. What form does it take after it leaves the elbow?

A. It is directed to 45 degrees; that is to prevent it churning up the settled oil. Well, as I say, it might splash some on this wall—you couldn't prevent that; I couldn't build a gas trap without shooting some oil on the side walls of the receptacle, but

(Testimony of David G. Lorraine.)

it would be put on there in a film like form with this construction. In order to see how that would act you can take this out here, this same ell and we can put it on any oil well and put it right out in the open.

Q. Well, isn't it a fact that the more you spread your oil before it reaches the oil in the bottom of the tank won't it facilitate the separation of the gas from the oil?

A. I haven't found that to be so, although there are a good many experts that argue that. [217]

Q. I want to know as a fact. I am not telling you.

A. I understand that. There is a good many of them that believe that by stirring the oil or moving the oil they can separate it that way, but I found out to get the oil in a settled condition just as quick as possible after it gets into the receiving chamber is the best way to separate oil and gas.

Mr. BAGG.—Now, Mr. Lorraine, I will ask you to state whether or not you have constructed an oil and gas separator exactly along the lines of the one that was sold recently to the General Petroleum Company and delivered to the plaintiffs?

A. Yes, sir.

Q. Do you have such a trap, an exact duplicate of that? A. Yes, sir.

Q. And in a position where you can give to the court, if the Court so desires, an actual demonstration of its workings under normal conditions such as obtains in the actual separation of oil and gas?

(Testimony of David G. Lorraine.)

A. I believe we can with the Shell Oil Company's permission. They have one right alongside of a new Trumble.

Q. Where is that?

A. At Signal Hill, the Horsh Well.

Q. Will you make that demonstration to the Court at any time the Court may desire.

A. I would gladly do it with the Shell Oil Company's permission.

The COURT.—How far is that from here?

Mr. BAGG.—About 22 miles, I should say.

Mr. LYON.—While we are on that subject, you couldn't see anything inside of the trap with that demonstration, could you, Mr. Lorraine?

The COURT.—On the outside?

A. You could see how the traps work, and we could take [218] the bottom out of the trap.

Mr. LYON.—Just answer the question: If we went down to the Shell Oil Company we would have no opportunity to see how the oil or gas acted inside of the trap; we would have to content ourselves with just what we saw on the outside, wouldn't we?

A. I don't know, Mr. Lyon. I would like to answer your question. There is not any way that you could determine the action that took place in that separator unless you put it on to a well and made the receptacle out of glass, and then the oil would spread on the walls and you wouldn't be able to see the action at that.

Q. Well, is there one at the Shell Oil Company's, so that we could take it apart to any extent and see

(Testimony of David G. Lorraine.)

what is inside of it? Because I want to go down there and want to see it if we can.

The COURT.—The one of the Shell Oil Company I understand that is one you made and sold?

The WITNESS.—Not to the General Petroleum. They have another one. They bought another one.

Q. No, but that is a counterpart of the one that you sold?

A. Yes, sir, an exact duplicate.

Mr. LYON.—If there is one that we can open up I am perfectly willing to go down to the Shell Company, if we can see something there—in fact, I would be very glad to—but if all we can see is the outside of the trap it is a question in my mind whether we had better take the time.

The COURT.—That wouldn't disclose the action on the inside?

Mr. BAGG.—No, sir; I don't think it would. Mr. Lorraine, can you by opening a manhole in the trap show how the oil flows in the trap that you mentioned at the Shell Oil Company's? [219]

A. No, because there is no way that you can put a hole in that trap and have that trap function like it would function when it is sealed. That would change the course entirely. For instance, if this had no oil outlet here (indicating) and the gas outlet is over here (indicating), if the oil was not going out of that and gas at the same time it wouldn't function like a gas and oil separator. Neither would that model (indicating). As far as this baffling feature is concerned, why the best way

(Testimony of David G. Lorraine.)

to demonstrate that would be put it right on the end of a well, right in the open so you can see just how that acts. I will be perfectly willing to take this model right here just as it stands and attach that to a quarter inch line or whatever the line would be reduced to; and put this on the oil well line from any flowing well—that same well that we have mentioned—and watch the action right there. That is the way I test the baffling. I think that would be a fair demonstration, to take their own model.

The COURT.—That would be with dead oil?

A. No, take it right from the flowing well, tap the line and take it right from the flowing well.

The COURT.—Then if you admit that to the atmosphere then you have got the gas released at once, so I don't suppose that would be a good demonstration?

Mr. BAGG.—No, I think, if your Honor please, he means to tap on to the main line as it comes from the well and run a connection out so that the character of the oil as it comes into this model trap would be exactly the same as that which comes from the main line into the company's receptacle.

The COURT.—And you would have to have this trap full or you wouldn't get a demonstration at all.

Mr. BAGG.—Just simply to show the action of the oil as it came through. [220]

The COURT.—Yes, I see.

The WITNESS.—It would be as fair as making

(Testimony of David G. Lorraine.)

a hole in the trap to watch that flow down, because it would be open just the same.

Mr. BAGG.—Mr. Lorraine, I will ask you whether or not you have made any actual experiments with this method of construction to ascertain the effect of the oil as it comes into this trap through that inlet pipe and the elbow, as indicated?

A. Well, before I tested this baffle out—

Q. I am asking you if you made them; just answer the question yes or no. A. Yes, I have.

Q. Now, go on and state what those experiments consisted of when they were made, if you can remember.

A. Well, I have been testing baffles of different descriptions and different kinds for the last 12 or 13 years at least; and the way I test baffles is just the way I suggested that we test this. I test them out in the open and I watch their action right in the atmosphere. I watch the oil and see whether it is frothy or foamy when it comes from these different types of baffles. If it comes in a foam why the baffle is no good; if it discharges the oil without foam why it is considered a good baffle. That is the object, to do away with the foam. That is what the principle of all baffles have been constructed on.

Mr. BAGG.—Mr. Lorraine, I hand you herewith a pamphlet marked "Department of the Interior, Franklin K. Lane, Secretary. Bureau of Mines. Van H. Mankin, Director. Technical Paper No. 209," I think it is. "Technology 49."

Marked Defendant's Exhibit "C" for identification, and ask you to state what that is.

Mr. LYON.—Now, wait a moment. We object on the ground that the book must speak for itself. The witness is not [221] qualified to answer it, and I call the Court's further attention to the fact that the date of the publication on the inside is February, 1919, and it would have no pertinency or bearing; it is not a part of the prior art and in no manner can it have any effect as evidence in this case.

Mr. BAGG.—I am not offering it in evidence right now. I am simply asking him to identify it, and then I will.

Mr. LYON.—It is immaterial what it is as far as this case is concerned.

The COURT.—I think he has a right to identify it and then the court to determine whether it should be admitted as evidence.

Mr. BAGG.—Afterwards.

Mr. LYON.—Well, doesn't that book itself show what it is? That is the only question.

The COURT.—I presume the book would be its own proof.

Mr. BAGG.—I am not trying to prove its contents. I am simply asking him to identify it as to what it is and then after he has done it—

The COURT.—Doesn't it identify itself?

Mr. BAGG.—Beg pardon?

The COURT.—Doesn't the book identify itself?

Mr. BAGG.—I think not; it doesn't identify it

(Testimony of David G. Lorraine.)
to the extent of telling exactly what the contents
of it are and I am just calling his attention to it.

The COURT.—He may identify it.

Mr. BAGG.—State what that is.

Mr. LYON, Jr.—We object upon the ground that
the witness is not competent. He doesn't know
anything about the book except what it shows.

The COURT.—What is the answer?

A. My answer is this pamphlet printed by W. R.
Hamilton, Department of the Interior, describing
different gas traps and their uses, the United States
Government gives these away [222] free of charge.
Technical paper 209.

Mr. LYON.—We move to strike out the answer
from the record on the ground that it is incom-
petent.

The COURT.—I will let the answer stand.

Mr. LYON.—Note an exception.

The COURT.—You can have that identified.

Mr. BAGG.—If your Honor please, we desire to
introduce this pamphlet in evidence for the purpose
of showing the state of the art, the pamphlet giving
a history of the oil and gas separators from the
very beginning, gotten out and compiled at the in-
stance of the Government and for free distribution
and anyone can have it and it is sent out broadcast
to all of the oil industry and so anybody should see
it. These gentlemen themselves have one.

Mr. LYON.—We object on the ground it is in-
competent, no foundation laid and not proper evi-
dence; and on the further ground that if the date

appearing upon the outside cover "1919" or in the statement on page 2 "First publication, 1919," is assumed to be the correct date of publication, it is not a proof of a prior art. It is not legal evidence of any kind and it is mere hearsay.

Mr. LYON, Jr.—We have had no opportunity to cross-examine whoever wrote that on any of the statements that are in there.

The COURT.—Does this show the date when these traps were used?

Mr. BAGG.—Some of them it does, if your Honor please. It doesn't tell them all.

The COURT.—Well, I think it ought to show the date when the traps were used or were invented.

Mr. BAGG.—It describes them as having been constructed, of course, prior to the time of the date of that pamphlet.

Mr. LYON.—Then under the law we would have a right to [223] cross-examine whoever wrote this article as to how much he knows about the original dates and so forth.

The COURT.—You haven't got the author here, have you?

Mr. LYON.—They haven't got the author here and know nothing about it.

The COURT.—Well, I will permit this to be admitted in evidence for the purpose of showing those traps where the date is apparent; and to all the others it will be no good at all.

Mr. BAGG.—Yes, sir, I understand.

Mr. LYON.—We note an exception to the ruling of the court.

The COURT.—Very well.

Mr. LYON.—Your Honor understands that there is no law that we are aware of that makes an instrument of this kind proof in court of the assertions that these things were known as of the date and that this instrument itself only speaks as to the date of its publication. That is our ground of objection.

The COURT.—I understand your ground of objection. The only thing in the mind of the court with reference to the introduction of that pamphlet is whether it is such a pamphlet, official pamphlet as a subject to be admitted in evidence.

Mr. BAGG.—I think it is, if your Honor please. That is the reason I am introducing it because it is an official document gotten out by the United States.

The COURT.—I won't do a *great* of harm anyhow.

Mr. BAGG.—It is now 4 o'clock, if your Honor please. I suppose it is adjournment time.

The COURT.—Yes. The court will adjourn until—

Mr. LYON.—We haven't got anything before us of course to show that even this Mr. Hamilton is a Government official or anything of that kind.
[224]

The COURT.—It seems to have been put out by the Secretary of the Interior.

Mr. LYON.—As information, yes; but as information of 1919 rather than prior.

The COURT.—I will adjourn court until to-morrow morning at 10 o'clock. How long is it going to take, Mr. Bagg, to complete this case?

Mr. BAGG.—I don't think we will have very much more testimony. I think we are almost ready to close with Mr. Lorraine.

The COURT.—Very well.

Mr. LYON.—Is it your Honor's disposition to go out and see this Lorraine trap that we have at our shop?

The COURT.—Out 22 miles?

Mr. LYON.—No, out ten miles. It is right out here, the one at the plant where we have cut out a section and arranged it so we can make this demonstration with the oil and we can make it with oil and with gas in it, or without, as you desire, and with any pressure.

The COURT.—Any objection to that?

Mr. BAGG.—None whatever, if your Honor please.

The COURT.—Very well.

Mr. LYON.—I ask that because I want to take a nipple off of that after we have made the demonstration and offer it in evidence.

The COURT.—The Court will go out there. When can we go, to-morrow?

Mr. LYON.—Any time to-morrow.

Mr. BAGG.—Any time it suits your Honor.

Mr. LYON.—We will furnish machines for the Court, the reporter, and so forth.

The COURT.—I think the Court would rather go in the afternoon.

Mr. BAGG.—I think we have only one or two other witnesses, [225] whose testimony will be short.

The COURT.—We will adjourn, then, until to-morrow morning.

(Whereupon an adjournment was taken until 10 o'clock to-morrow, March 24, 1922.) [226]

[Endorsed]: Original. In the District Court of the United States for the Southern District of California, Southern Division. Before Hon. Charles E. Wolverton, Judge. Francis M. Townsend et al., Plaintiffs, vs. Davis *S.* Lorraine, Defendant. No. E-113—Equity. Reporter's Transcript of Testimony and Proceedings on Trial. Vol. II. Filed Apr. 7, 1922. Chas. N. Williams, Clerk. By R. S. Zimmerman, Deputy Clerk. Los Angeles, California, March 23, 1922. Reported by J. P. Doyle, E. L. Kincaid, Doyle & St. Maurice, Shorthand Reporters and Notaries, Suite 507, Bankitaly International Building, Los Angeles, California, Main 2896.
[227]

INDEX.

VOLUME III.

Defendant's Witness:	Dr.	Cr.
David G. Lorraine	249	275
[228]		

Friday, March 24, 1922, 10 o'clock A. M.

The COURT.—You may proceed with the examination.

Mr. BAGG.—Mr. Lyon is not here yet.

The COURT.—Mr. Lyon is not here. You want to wait for him? We will wait a few minutes.

(Short recess.)

Mr. LYON.—It seems there was a mistake in time, your Honor, about ten minutes.

The COURT.—That is all right.

Mr. BAGG.—Are you ready to proceed?

Mr. LYON.—Yes, we are ready to proceed.

**Testimony of David G. Lorraine, for Defendant
(Recalled).**

DAVID G. LORRAINE, recalled.

Direct Examination (Resumed).

(By Mr. BAGG.)

Q. Mr. Lorraine, I hand you Defendant's Exhibit "C" which was introduced in evidence yesterday, opened at page 12, and ask you to state whether or not the drawing contained on page 12 is a correct drawing of the Teco trap as you examined it in March—

A. 1905.

(Testimony of David G. Lorraine.)

Q. (Continuing.) —1905, and which you described yesterday upon the witness-stand?

Mr. FREDERICK S. LYON.—We object to that as leading and suggestive, and incompetent; no foundation laid, the witness not pretending to have made this drawing. He has already made a sketch of which he asserts he saw at that time, and we object further on the ground that this publication is not an official publication in any sense, and that is unproven here, a mere copy, not certified in any manner, and it is not pretended that this publication is, as a matter of act, any official investigation or [229] of any date. We do not think that a publication, and a mere essay written in 1919, simply upon the general statements collected by a man can be proof of a fact. It is a proof, of course, if otherwise competent, as far as a copy is concerned, of a publication in 1919, and as far as proving prior use, I call your Honor's attention to the high degree of proof that is required in that class of cases, and, as said by Justice Brown in the barbed-wire case, this oral testimony of this class is most satisfactory and least to be considered testimony of all kinds in law. The telephone cases, the barbed wire case, and a large number of cases have adverted to that fact, that every inventor is subject to attack by simply merely oral testimony that someone has seen a device at some previous time.

The COURT.—Let me see that pamphlet just a moment. (Receiving same.)

Mr. F. S. LYON.—The pamphlet itself does not pretend to give a date for this so-called Teco trap, and there is no pretense that it was made by general investigation. The author who writes the essay admits that he depends on the information of so and so, and so and so, naming different parties, even on the title page. Take for instance page 6, your Honor, under "Acknowledgments."

The COURT.—The Bureau of Mines—this seems to be printed in the Bureau of Mines, carrying out one of the provisions of the Act to disseminate information concerning investigations. The printing of each of its publications. "When this edition is exhausted, copies may be obtained at cost price only through the superintendent of documents, Government Printing Office, Washington, D. C." The superintendent of documents is not an official of the Bureau of Mines. He has an entirely separate office, and he should be addressed "Superintendent of Documents."

Mr. F. S. LYON.—Take, your Honor, page 6, under the heading "Acknowledgments" and you will see the author admits that it is under no knowledge of his. [230]

The COURT.—What was that?

Mr. F. S. LYON.—The bottom of page 6, under the heading "Acknowledgments."

The COURT.—Yes.

Mr. F. S. LYON.—Now, a patent issued by the Government itself can't be brought in unless there is a certain, a copy of another printed publication

(Testimony of David G. Lorraine.)

that is in the library of the Patent Office, the official library.

Q. (By the COURT.) I understand that you examined this device? A. Yes, sir.

Q. Personally? A. Yes, sir.

Q. And you know this to be a presentation of that device?

A. Well, it is not exactly the same, but the construction is the same. I should say that that trap is larger in diameter in proportion to its height of the trap that was constructed there, but outside of that the construction, as I know it to be, because I know we had an argument about the bottom being caved in in place of out.

The COURT.—I will admit this testimony.

Mr. F. S. LYON.—Note an exception.

The COURT.—You may have an exception.

Q. (By Mr. BAGG.) Now, you testify then, that this, so far as the internal construction is concerned, is a correct drawing of the trap as you examined it?

Mr. F. S. LYON.—Same objection and exception, your Honor.

The COURT.—Same ruling.

A. As far as this head here is concerned, and as far as this float is concerned. You can see the float through the gas outlet in the top, like that (indicating).

Q. (By Mr. BAGG.) Well, with reference to the intake and the means of bringing the oil, the gas into the chamber, is that—

(Testimony of David G. Lorraine.)

Mr. F. S. LYON.—The same objection and the same exception.

The COURT.—The same ruling all through.

Q. (By Mr. BAGG.) Is that the same as the way you examined it? [231]

A. One of the intakes, I took a piece of baling wire and looked through there, and also ran that baling wire through.

Q. (By the COURT.) Where is the oil brought in on that trap?

A. This shows four places. Now, I would not like to say that that particular trap had four places because I don't remember that part of it, but what I do remember is there was at least three inlets here in the top.

The COURT.—Yes, I understand.

Q. (By Mr. BAGG.) Now, did this—

The COURT.—Has that been patented?

Mr. BAGG.—Yes, sir.

The COURT.—Well, why not have the patent?

Mr. BAGG.—If your Honor please, I will explain to you why we do not have the patent: You will remember when we prepared for the trial of this case we only prepared for this particular patent, the trap that was installed down there on Well No. 3, and then they came in with the supplemental petition yesterday morning and we have not had time to get it.

The COURT.—Can you get that patent?

Mr. BAGG.—We will get it if your Honor will give us permission to do that.

Mr. F. S. LYON.—What patent do you refer to?

Mr. BAGG.—That is the Teco trap.

Mr. F. S. LYON.—That is the patent to Fisher that you referred to in your motion to amend your answer, isn't it?

Mr. BAGG.—No, no, it is not, not the Teco trap; it is a patent of a valve.

Mr. F. S. LYON.—Just a moment. Why, if your Honor please, I am not offering this in evidence or admitting its admissibility for the purpose of proving any of the allegations or recitals therein, but the defendant has in that motion to amend its original answer, set this up as a patent, and so far as we can see, it is identically the same as the Teco patent, and you will notice the [232] patent was issued in 1918, if I get it correct—

The COURT.—Patented May 9, 1916?

Mr. F. S. LYON.—1916.

Mr. BAGG.—If your Honor please, that, as it shows on its face, is a patent for that particular valve installed in there, and has no connection whatever with the trap. That patent is applied for by somebody else beside the Teco people. This is merely a patent for the—

Mr. F. S. LYON.—This very valve right here, that mechanism (indicating).

The COURT.—This one down here (indicating)?

Mr. F. S. LYON.—Yes. Take figure 1 there is the same view. Evidently the Bureau of Mines, so far as that is concerned, have taken the views of the drawing, practically.

Mr. BAGG.—If your Honor please, this is an application of Charles E. Fisher for a float operated drain valve and then the patent for which this is secured has nothing whatever to do with this trap. This is the Teco trap and we could not introduce this because it is a patent for a float operated drain valve. The Teco trap was patented before that.

Mr. F. S. LYON.—It seems to us, your Honor, that the parties have had a year and about three months in this case and this evidence is just as pertinent to the original complaint as the other, and they should have had any patents here that they wanted.

The COURT.—Well, I will hear this testimony with the understanding you get that patent.

Mr. BAGG.—Yes, sir. We will get the patent and submit it to your Honor.

Mr. L. S. LYON.—May we ask the defendant to prove the patent that you get, what it is?

Mr. BAGG.—We do not know at the present time.

Mr. L. S. LYON.—You do not ever know that there is— [233]

Mr. BAGG.—Yes, we do. It states on that pamphlet it is a patent.

Mr. F. S. LYON.—That is, all you know it states so here.

Mr. BAGG.—That is all we know, whether it is patented or not—

Mr. L. S. LYON.—We do not think the trial of the case, your Honor, should be—

(Testimony of David G. Lorraine.)

The COURT.—I am a little in doubt as to whether or not that patent is competent evidence in this case, but I am going to admit it and if I am wrong about it I will rule it out later.

Mr. F. S. LYON.—It don't seem to me that we ought to withhold the conclusion of the evidence in this case to now permit the defendant to make an examination and see if he can find another or different patent on this so-called trap.

The COURT.—Well, that is very good evidence that the patent has issued when it is referred to in that pamphlet.

Mr. F. S. LYON.—That is written in 1919, and here is this Fisher patent which shows identically and written in 1916.

Mr. L. S. LYON.—The patent the Government refers to is this Fisher patent, undoubtedly, because it is identically the same as they have in their patent.

The COURT.—That is a subsidiary patent.

Mr. BAGG.—Yes, a petition for an improvement.

Mr. F. S. LYON.—I do not know whether that is a fact or not in view of what counsel agreed to in his statement, your Honor.

The COURT.—I think I will adhere to what I said.

Q. (By Mr. BAGG.) Now, Mr. Lorraine, I will ask you to refer to page 15 of this same exhibit and ask you to state if the description of the Teco trap as outlined and set out beginning on page 15 is true and correct description of the Teco trap,

as you examined back in 1905, and which you described yesterday?

Mr. F. S. LYON.—Well, we object to that, your Honor. [234] The pamphlet itself must stand as evidence so far as it is concerned, and certainly, where the high degree of proof in regard to oral testimony is required, that is required in the proof of prior use in patent cases, counsel ought not to be permitted to ask an omnibus question of that kind. We have had this witness' testimony as to his recollection and his knowledge. Now, if he simply be asked a leading question, "Is this an accurate description of what you saw" adds nothing to his evidence or anything else because it is not shown that he had anything to do with this publication at any time, and it would be simply, as a matter of fact, without any weight whatever.

The COURT.—As I understand, this is being offered as an exemplification of what the witness saw and examined himself?

Mr. BAGG.—Yes, sir. Not based upon the authenticity of that pamphlet at all but simply upon his recollection.

The COURT.—Very well. I will hear it.

Mr. F. S. LYON.—Our objection is that the witness should describe what he saw himself and not have an article allegedly describing the whole thing put before him and ask him if that is what he saw at that time. It is leading and suggestive.

The COURT.—Well, he could hardly ask that question in any other way. The witness intro-

(Testimony of David G. Lorraine.)

duced a drawing of his own here, and this now is to exemplify what he saw there, and he is now undertaking to describe that, undertaking to answer that question. I will hear the answer.

Mr. F. S. LYON.—Note an exception.

The COURT.—What is your answer?

A. Why, so far as I can remember, as I said in the beginning, I don't know whether there is three inlets at the top or four in this particular trap, but I am quite positive there are three, at least, and they were arranged so that they showered the oil upon the side walls of the trap as it entered. I saw the intake before they connected it up. I was very much interested in the construction of it and the base of this trap was turned in, [235] in place of out, and there was quite an argument there about them; they were afraid the trap would not stand the pressure without bulging. There was an argument about the action of the oil as it entered the trap, the stirring action, we were discussing it there at the time.

Q. (By the COURT.) You did not see the action of the oil as it entered?

A. I could not. After they turned the oil into it I could not see it.

Q. (By Mr. BAGG.) Mr. Lorraine, you heard the testimony of the witness Ray yesterday with reference to the various traps which he had examined and had been put out by you or your company. The first one was the Tonner lease No. 3. He testified that on two or three occasions he examined it

(Testimony of David G. Lorraine.)

along about December and there was between 40 and 45 pounds pressure. I will ask you to state what, if you know, was the disposition of the gas or what disposition was being made of the gas coming from that well at that time.

A. Why, the pumping of the gas into the absorption plant.

Q. How far away?

A. Well, the exact distance I could not say, but I would judge about 400 feet.

Q. Now, at that absorption plant what, if any, device do you know of that they had on the gas line for restricting the passage of the gas?

A. Well, just what they had to hold back the pressure, I don't know, but they evidently could not take care of the gas and was building up pressure on the line.

Q. Is that what caused this pressure of between 40 and 45 pounds at that time?

Mr. F. S. LYON.—Wait a moment. We object to that as leading and suggestive, and incompetent. The witness says he does not know. [236]

The COURT.—Well, do you know?

A. I know that the gas plant was holding the pressure back on the trap.

Q. (By Mr. BAGG.) I will ask you to state if there was any means whatever on that gas trap for the purpose of maintaining a gas pressure?

Mr. F. S. LYON.—We object on the ground the witness has already stated that he does not know. He says he knows the pressure was there. He has

(Testimony of David G. Lorraine.)

already stated he did not know what means it was.

The COURT.—What trap was that, now?

Mr. BAGG.—This trap was the trap down on No. 13 and No. 3.

The COURT.—Oh, yes.

Mr. BAGG.—The first trap they described.

The COURT.—I understand.

The WITNESS.—I know there was nothing connected with the trap or the valves that was maintaining a pressure on the trap that was installed.

The COURT.—They had the valves there?

A. It was in operation, yes.

Q. They had the meter there to determine the pressure? A. Oh, yes.

Q. All those appliances were there connected with the trap itself? A. Yes, sir.

Q. (By Mr. BAGG.) Was there any means on the trap,—I do not think I understood the witness, and I am asking that I may understand it myself, if your Honor please.

The COURT.—Yes.

Q. (By Mr. BAGG.) Was there any means upon the trap itself that you had installed or put on the trap or on the gas line for the purpose of maintaining any pressure within the trap?

Mr. F. S. LYON.—Well, we object to that, your Honor, as [237] leading and suggestive, and calling for a conclusion of the witness. He ought to be able to state what means, if any, there was there without simply giving a yes or no answer. He is building these traps and installing them, and he

(Testimony of David G. Lorraine.)

ought to know what he furnished, and so forth, in that line.

The COURT.—Well, the answer will probably call for an explanation. I will hear the answer.

A. Well, the valves are so constructed that go with the trap that they do not maintain any back pressure whatsoever on the trap. Only one valve moves toward the closing position, like the oil outlet valve, or gas valve, would move towards open position, and it leaves the same size of orifice or opening in the outlets at all times.

Q. (By the COURT.) Well, it is an automatic action, isn't it?

A. Automatic action, yes, sir, it is.

Q. Well, when the oil rises to a certain position, the oil valve acts and lets the oil out?

A. Yes, sir.

Q. And the same way with the other, with the gas?

A. Only they work in synchronism; they both work together.

The COURT.—I understand. What is the difference between that and the plaintiff's trap?

A. Well, the plaintiff's trap uses a back pressure valve that holds a certain pressure in the trap and maintains a pressure, not on all of his traps but, according to his patent, he has a back pressure valve. It does not show in this drawing (indicating); I do not notice that, and this gas outlet valve, shows in the patent.

Mr. BAGG.—Here is a copy of the Trumble patent.

(Testimony of David G. Lorraine.)

Q. I will ask you to state, Mr. Lorraine,—I am handing [238] you Plaintiff's Exhibit 1, and ask you to locate on the drawing in connection therewith the back pressure means or the gas pressure means described in that patent (handing document to the witness).

A. This is the back pressure valve right there (indicating).

Mr. F. S. LYON.—11 in the figure.

The WITNESS.—1, isn't it?

Mr. F. S. LYON.—1 of the Trumble patent.

The WITNESS.—The back pressure valve, the action is entirely different. This will hold the concrete pressure where my valves will hold no pressure at all, providing the gas can escape into the line.

Q. (By the COURT.) Is this where the oil enters?

A. No, sir, the oil enters through this line here, and the gas comes up through, below that (indicating).

Q. This is for the storage of the gas?

A. Yes, sir.

Q. This is the back pressure (indicating)?

A. That is the back pressure, the float control valve that prevents the trap from overflowing, but this is the back pressure valve here that maintains the pressure on the flowing volume of oil.

Q. (By Mr. BAGG.) What is the actual effect of this back pressure valve that you have described as—what was it?

(Testimony of David G. Lorraine.)

A. Figure 1.

Q. No. figure 11. What is the construction or the effect of that valve; what does it do?

A. It holds a constant pressure.

Q. Well, what does it do with reference to the amount of space in this passage line?

Mr. F. S. LYON.—Opens and closes the orifice.

Q. (By Mr. BAGG.) Does it have a tendency to restrict it?

A. Yes, it holds a steady pressure, where my valve is [239] an automatic valve, that does not hold a steady pressure and merely prevents the trap from overflowing.

Q. Then that has a tendency to restrict the passage of this gas out through the line; is that correct?

A. Yes, that is it.

Q. Now, then, I wish you would locate the other two valves in this patent, as shown on this drawing.

A. This lower valve here is the oil outlet, and this upper valve here controls the gas outlet (indicating).

The COURT.—That is in there?

A. They do not work in synchronism as my valves work. My two valves work on the outside, the exterior of the trap, and one moves towards the closing position and the other moves towards opening position. These valves do not work together; the oil does up to this float before they close that valve and drop down again.

Mr. F. S. LYON.—To save time,—I do not want to interrupt you, your Honor, or Mr. Bagg, you do

not contend that this valve that the witness has just last pointed out in the Trumble patent 40 in the center is the means for maintaining pressure?

Mr. BAGG.—No.

Mr. F. S. LYON.—Neither do we, your Honor, and that is a subsidiary feature which has only to do when there is an exceptional condition, and it is not the pressure means of the claims. I think you will agree with that.

Mr. BAGG.—Yes. What we are trying to—

Mr. F. S. LYON.—It has no comparison in any manner with the valves that the witness is referring to in his patented device.

The COURT.—But this upper valve is controlling?

Mr. F. S. LYON.—The valve 11 is part of the means for maintaining the pressure on the claim.

The COURT.—And that is in the claim? [240]

Mr. F. S. LYON.—Yes. And you have the Lorraine patent, just so that we may have the issues clear before your Honor, the Lorraine valves are valve 28, and so stated in these specifications and under the admission of the defendant that that is what they were used as.

Mr. BAGG.—If your Honor please, that is what the purpose of the testimony of this witness is, is to show that in the Trumble trap there are three valves, and that in the Lorraine trap, as described down there, and has been installed on that lease, only has the two valves which are worked internally. In other words, this valve here is not on that line

(Testimony of David G. Lorraine.)

and has never been used on that line, never was installed on it and never was used on it, and that the only valves that the plaintiff has in this particular trap are these two internal valves which regulate the work synchronously and opens the oil outlet and at the same time closes the gas outlet, and *vice versa*.

The COURT.—You mean the defendant?

Mr. BAGG.—Yes, sir, the defendant, and governed altogether by the height of the oil in the trap, and that we have not used that before. That is what we are trying to show.

Q. Now, Mr. Lorraine, I will ask you to state this: How many valves are used or required in the Trumble trap? A. Why, if the—

Q. Just answer that question.

Mr. L. S. LYON.—If the Court please, if that is the purpose of the testimony, we object to it as not raised by the pleadings. The pleadings state that he has made his traps in accordance with this particular patent. That is the issue raised by the answer. Now, he proposes to go back on his pleadings and states they are made some other way.

Mr. F. S. LYON.—Not only that, but that was the concession and stipulation on March 22d, the opening of this case.

Mr. BAGG.—If your Honor please, we stipulated—

Mr. F. S. LYON.—Just a minute, and I will read the record [241] on page 7 of the reporter's transcript: You will find this: "Mr. Lyon: In the first place the answer alleges that the defendant is manu-

facturing its devices in accordance with a certain . . . substantial conformity with that patent, yes."

Mr. L. S. LYON.—Paragraph 12 of the answer says "this defendant states the device for separating natural gas and crude petroleum, which he has made, is made according to the specifications and claims made and so allowed in his said application for letters patent." The issue is that they claim they have made it in accordance with the specifications. The only purpose of this testimony is to raise something that is not pleaded at all.

Mr. BAGG.—If your Honor please, in our answer we deny infringement of their patent, and we in our stipulation, we say that we are manufacturing this patent, or our machine, in conformity with the claim set out in our patent and specification. Now, then, we are not compelled—I do not think that learned counsel on the other side will say that we are compelled under any circumstances to make an exact duplication of that trap at any time. The only thing we are required to do under the patent would be to make one in substantial conformity with the drawings and the claims. Now that is all we are required to do. We can change those methods and means any way we want to.

The COURT.—Well, these valves are part of the claim, aren't they?

Mr. BAGG.—No, this pressure maintaining valve is not, no, sir.

Mr. F. S. LYON.—It is a part of your description, though, isn't it?

Mr. BAGG.—It is a part of our description, but it is no part of the claim. We are simply denying the infringement and we can show under that allegation,—we have plenty of authorities for that,—we can show that in this trap we have left out that particular valve, which is an actual fact, and we are still within the provisions of our claims and of our patents. [242]

The COURT.—Well, that patent is not here. The patents have not been issued.

Mr. BAGG.—The patent had not been issued at the time we filed our answer.

The COURT.—Your patent has been issued now?

Mr. BAGG.—Our patent has been issued since that time.

The COURT.—That contains that valve?

Mr. BAGG.—That provides for a valve of that kind, but does not necessarily provide that we shall use it, simply put in the drawing, and simply describes a part of the pressure regulating means, if we want to use it, but we do not have to use it if it is not necessary, and it would be a useless adjunct to our trap if not necessary, and we found it was not necessary here, and we never used it.

The COURT.—The only question is whether or not you are not bound by your answer and your stipulation.

Mr. BAGG.—I do not think so, if your Honor please, because of the fact that we have denied in-

(Testimony of David G. Lorraine.)

fringement. Now, then, on the rules of equity, as I understand it, they provide we can set up all the defenses that we want whether they are inconsistent or not. Now, then, we deny infringement. That means that we can say that our trap does not,—that we are putting out is anything other than what the patented device that the plaintiff is suing for. We can manufacture any kind of a trap we want to and prove any kind of a trap we want to, or any kind of a construction trap that we want to, providing it does not infringe the claim of the plaintiff. We are not bound by any patent, or anything else. Now, then, as a subsequent and additional defense we allege we are making these traps in accordance with the terms and provisions of our patent, but we can set up both of these defenses and prove either one of them under the rules of equity.

The COURT.—I will permit him to answer.

Mr. F. S. LYON.—Note an exception. [243]

The WITNESS.—Will you repeat that question he asked?

Mr. BAGG.—Well, to save time—

Mr. F. S. LYON.—Will you speak a little louder, please? I am afraid the reporter won't hear you and I know we can't at the table.

The COURT.—Are you speaking to me?

Mr. F. S. LYON.—No, I am speaking to Mr. Lorraine.

Q. (By Mr. BAGG.) In the Trumble trap, as disclosed in their exhibit—is this an exhibit in this case?

(Testimony of David G. Lorraine.)

Mr. F. S. LYON.—One.

Q. (By Mr. BAGG, Continuing.) Plaintiff's Exhibit 1 contains how many valves?

A. Well, I have noticed on these later traps—

Q. Well, I am talking about on this particular drawing, Mr. Lorraine.

A. I never saw a Trumble trap with this floating valve in the interior.

Q. If you will just answer my question we will get along a lot faster.

According to the drawings in this trap, how many valves are there provided for?

A. Two or three here.

Q. All right. What are they?

A. Oil discharge valve, the valve to prevent oil from going into the gas line, a valve for maintaining a pressure means on the oil.

Q. Now, in the Lorraine trap as manufactured and installed and now being used on the Tonner lease No. 3, I will ask you to state whether or not there is any third valve or valves for maintaining that pressure on the gas line? A. No, sir.

Mr. F. S. LYON.—If your Honor please, it will be understood that our objection and exception goes to all the testimony with regard to an attempt to vary the admission and stipulation. [244]

The COURT.—Yes, so understood.

A. No, there is no valve on the gas line for maintaining any pressure upon the trap.

Q. (By Mr. BAGG.) Then I will ask you to state if there was any pressure at any time upon the

(Testimony of David G. Lorraine.)

Lorraine trap installed and used on Tonner lease No. 3 at the times described by the witness Ray—Will you read that question?

(Question read.) —was the same caused by any mechanism or device connected with the Lorraine trap.

A. No.

Mr. F. S. LYON.—Wait a moment. We object to that calling for a mere conclusion of the witness. It is perfectly obvious it must have some mechanism, your Honor, connected with it in some manner.

The COURT.—This was a question directed to the witness to say whether or not he has in that particular interfered with that patent. I think that is proper. You may answer the question—he has answered it, however.

Mr. BAGG.—Yes, sir.

Q. (By Mr. BAGG.) If there was such a pressure was the device causing such a pressure any part of the Lorraine trap?

Mr. F. S. LYON.—We object to that as calling for a conclusion of the witness, and not for a statement of fact; leading and suggestive. There was pressure there, and it was connected with a line and the pressure was maintained, the witness admits. Now, it is immaterial whether that valve was close or a long ways off, and it is simply an argument. The witness has already stated that they did not use the particular valve 28 close to the *tap*. Now, that is as far as he can go on that statement, and I think it is perfectly clear to the Court. He has also ad-

(Testimony of David G. Lorraine.)

mitted, by virtue of the connections there with the compressor plant that the pressure was maintained and that the necessary gaging, and so forth, were in the trap for reading it.

The COURT.—I will overrule that objection. You may answer. [245]

A. There was no valve or no means for maintaining any pressure on that trap for the simple reason when they turned the gas into the same line and did not put the gas into the absorption the pressure went right down on the trap.

Q. (By Mr. BAGG.) I will ask you to state if the Lorraine Gas Company, or you, had anything to do with the connections on the gas line to the absorption plant?

Mr. F. S. LYON.—We object to that, your Honor. It is immaterial whether they had anything to do with it or not. The question of infringement is what they sold these people and how it was intended to be used, and there is no denial that they sold them; the whole contention here, if the parties instead of using one valve used another pressure valve at another point, why, they have not changed it at all.

The COURT.—I will hear the answer. Of course, if two persons are violating,—are infringing, either one of them would be liable.

Mr. F. S. LYON.—Both of them would be liable.

The COURT.—Either one of them would be liable.

(Testimony of David G. Lorraine.)

The WITNESS.—What was the question, please? (Question read.)

A. No, we had nothing to do with putting in the gas line. The gas line was already in when we put the trap out there, when we installed the trap.

Q. (By the COURT.) Did that gas line have a valve in it?

A. Not to my knowledge; no back pressure valve that I know of.

Q. (By Mr. BAGG.) Mr. Lorraine, I am handing you here a photograph which I will ask the clerk to kindly identify as Plaintiff's "D"—Defendant's Exhibit "D," and ask you to state what that photograph is (handing photograph to the witness).

Mr. F. S. LYON.—Wait a minute. We would like to see it.

Mr. BAGG.—Well, he can identify it. Just sit down and [246] identify it.

A. It is a photograph of the two separators at Tonner lease No. 3—this is the Lorraine and this is where the gas outlet was (indicating).

Q. Now, listen. Just identify that and tell us what that is.

A. This is the Lorraine separator installed on—

Q. What is that that I handed you there?

A. A photograph.

Q. When was that photograph taken?

A. It was taken in April, 1921; some time the latter part of April; I cannot say the exact date.

Q. 1921? A. Yes, sir.

(Testimony of David G. Lorraine.)

Q. Last year? A. Yes, sir.

Q. Who took that? A. The Putnam Studio.

Q. Under your direction? A. Yes, sir.

Q. And employed by you?

Mr. BAGG.—Now, if your Honor please, we offer this in evidence (handing photograph to Mr. Lyon).

Mr. LYON.—Do you offer this in evidence?

Mr. BAGG.—Yes.

Mr. LYON.—No objection. I want to ask one question:

Q. That photograph correctly shows the connections as made at that time, does it? A. Yes, sir

Q. (By Mr. BAGG.) Now, at the time this photograph was taken, was the Lorraine Oil and Gas separator shown therein connected up with the well and in operation?

A. Yes, sir. [247]

Q. I will ask you to examine the pressure gage on that and state to the Court what that reads.

A. Well, its reading here is about zero at the present time.

Q. (By the COURT.) It was in operation, you say, at the time.

A. Yes, sir.

The COURT.—Let me see that (receiving same).

Mr. F. S. LYON.—I suggest you take that photograph out.

Mr. BAGG.—Yes, we will take it out.

Mr. F. S. LYON.—I thought you could do it readily without loosening the whole thing.

Mr. BAGG.—That is all.

(Testimony of David G. Lorraine.)

Cross-examination.

(By Mr. L. S. LYON.)

Q. Now, Mr. Lorraine, as a matter of fact, in making your traps do you intend that it shall be used either with or without pressure, as the operator desires.

A. Well, if the pressure blows up in the gas line there is no way in the world that you could operate the trap without pressure. For instance, we had a trap on Wilbur well out here at the Shell Oil Company with a 4-inch line, and that line alone maintained a pressure of 80 pounds on that trap.

Q. You intend, then, that the operator shall, if the operator desires, use the trap with pressure?

A. All traps ever constructed had to have a pressure on them—

Q. That is not answering the question.

A. No, I do not intend to, no.

Q. Do you expect it will be used with pressure?

A. If the gas blows up the pressure it is unavoidable.

Q. Now, does it make any difference in your trap whether or not there is pressure in it?

A. No, it does not make any difference. [248]

Q. Is there any advantage in your trap at all to use pressure? A. No, it has no advantage.

Q. Well, now, I notice in Plaintiff's Exhibit 3,—which you state is your patent,—didn't you?

A. Yes, sir.

Q. And you are the David G. Lorraine to whom this patent was issued? A. Yes, sir.

(Testimony of David G. Lorraine.)

Q. And you signed the specifications, didn't you?

A. Yes, sir.

Q. And took the oath that it was correct?

A. Yes, sir.

Q. Well, now, how do you account for this statement: "From the above it will be seen that I have provided a method for separating or facilitating the separation of the gas and oil and separately discharging the same from emulsion; and furthermore, have provided a method in which, by maintaining a predetermined pressure in the oil receptacle, the latter is subjected to pressures having the effect of expressing the gaseous content from emulsions, the gaseous constituent in the emulsion being driven from the denser liquids by the increase in the pressure on the oil within the receptacle 2. This, therefore, prevents the loss of the valuable gaseous constituent such as occurs in apparatus in which the oil passes immediately from a well or other source to an apparatus in which it is subject only to atmospheric pressure." Did you write that?

A. Yes, sir.

Q. Now, did you write this statement: "It has been found from practical experience in the operation of this apparatus that there is an increase in the production of oil from some wells because of the uniform flow from the separator which prevents the rapid increment in the quantity of sand ordinarily found in wells, [249] and which increment results in the clogging or jamming of the well and

(Testimony of David G. Lorraine.)

loss of production until the well is blown." Did you write that? A. Yes, sir.

Q. Now, then, you have there stated two advantages, haven't you, of keeping a pressure on the trap?

A. Well, that advantage is not for separating gas and oil.

Q. I thought you said there was no advantage in keeping a pressure in your trap?

A. I understood you to say it was in the separating, separating gas and oil.

Q. How about this first advantage where it says, "This, therefore, prevents the loss of the valuable gaseous constituent such as occurs in apparatus in which the oil passes immediately from a well or other source to an apparatus in which it is subject only to atmospheric pressure." There you have expressed an advantage of having pressure in your trap in regard to preserving these gaseous vapors, haven't you?

A. Well, do you understand the difference between emulsified oil and just separating gas and oil?

The COURT.—Do not argue the question.

Q. (By Mr. L. S. LYON.) What is that difference?

The COURT.—Just state the answer to these questions.

Mr. L. S. LYON.—Just read the question—Well, I will reframe the question to the witness.

The WITNESS.—What was the question?

Mr. L. S. LYON.—Read the question.

(Testimony of David G. Lorraine.)

(Question read.)

A. Well, that does not necessarily say that. Atmospheric pressure—you could take it off at zero in place of letting the vapor out— [250]

Q. Will you just answer the question?

A. Well, that is the way I would answer that.

Q. Well, you have expressed an advantage here of having pressure in your trap as an advantage in that it keeps your gaseous vapors from being lost? A. By atmospheric pressure, yes.

Q. They would be lost at atmospheric pressure, you said? A. Certainly.

Q. Now, then, by having a pressure in your tank you preserve some of them, don't you? Didn't you state that in your patent?

A. Well, you take them off the vacuum they would be preserved also.

Q. By having a pressure in your tank you do preserve them?

A. Not in this apparatus where we have no—

Q. In your patent you stated it was an advantage, didn't you?

A. Well, I do not think it is, though.

Q. Well, but you stated it was in your patent, didn't you? A. I guess I must have.

Q. In this photograph of the Tonner installation will you trace out the gas line of your trap? Just show so the Court can see it (handing photograph to the witness).

A. This is where the gas line—this is the gas

(Testimony of David G. Lorraine.)

outlet down to this valve and down over here, this is the outlet line.

Q. Now, where does that pipe go?

A. It goes in the ground, goes up to this absorption plant where you see those towers.

Mr. F. S. LYON.—Now, the witness has referred to a pipe which, for convenience, we will mark "X" in the photograph.

Q. (By the COURT.) Now this is the pipe here you refer to, running down here (indicating)?

A. Yes, sir.

Q. Comes down and joins to this (indicating)?

[251] A. Yes, sir.

Q. (By Mr. L. S. LYON.) Now, what is this right here next to this figure "X"?

A. That is a gate valve.

Q. Is that a valve? A. A gate valve; yes, sir.

Q. What is it, a gate valve?

A. It don't maintain any pressure; just simply closes and opens, a sliding valve, up and down.

Q. Well, if you would close it practically until it was entirely shut, what would happen? Would it change the pressure at all?

A. Yes, but it would not sustain a pressure; would not maintain a pressure.

Q. It could act as a back pressure valve, couldn't it? A. I would not say so; no.

Q. It would build up a pressure in the line, wouldn't it?

A. It could build it up providing you kept the gas liquid coming, yes, but this is not a back pres-

(Testimony of David G. Lorraine.)

sure valve and will not sustain or maintain a back pressure.

Q. Then, in this Tonner lease you did have, on the gas outlet pipe, a valve immediately adjacent the trap, did you not?

A. Not a back pressure valve.

Q. Well, you had a valve, didn't you?

A. Yes, sir.

Q. Why did you tell the Court there was no valve at all when you were describing that?

A. No back pressure valve.

Q. You did not say that. You said there was no valve. A. I said there was no valve?

Q. As I remember your testimony.

The COURT.—In its present construction?

Mr. F. S. LYON.—No, at the Tonner lease, I think, your Honor.

The WITNESS.—I said we sold them, I believe, —I did not [252] say those words. I said there was an oil discharge valve and a gas discharge valve that went with the trap and one moved toward the closing position and the other moved towards the open position. Those gate valves on the line have absolutely nothing to do with controlling the pressure or the functioning and the separating.

Q. What kind of a valve is this pictured as 28 in your patent, Plaintiff's Exhibit 3?

A. That is a back pressure valve, but that is not used at the Tonner lease.

(Testimony of David G. Lorraine.)

Q. Now, then, that would act as a means for maintaining pressure in the trap, would it not?

A. Yes, sir.

Q. Now, then, if you continue this pipe, pipe 27, gas outlet pipe to some other point where the plant itself maintains the pressure in the line either due to some restricting orifice or some valve at that plant, then the pressure would be maintained in the trap without this valve 28, wouldn't it?

A. It certainly would, if you keep the pressure on the line.

Q. Now then, doesn't this valve 28 open and close the gas outlet line 27?

A. We never had that type.

Q. I mean if it worked as in this patent, wouldn't it open and close it? A. Yes, sir.

Q. And would it maintain a back pressure then?

A. That weight on that bar there is connected with the stem, and their weight would hold just as much pressure, whatever it would weigh according to the distance from this fulcrum here to this fulcrum here (indicating).

Q. In other words, it would do it automatically, it would maintain a certain back pressure automatically.

A. Yes, sir; if that valve was used.

Q. Now then, how would it do that? [253]

A. Why, it would do that if the well would produce it.

Q. That weight would keep the valve closed a certain amount, wouldn't it? A. Yes, sir.

(Testimony of David G. Lorraine.)

Q. And by closing the orifice a certain amount it would build up the back pressure, would it not?

A. It simply would stay right on that much pressure and hold that much pressure back providing the well would produce that pressure.

Q. I mean in the line. A. Yes, sir.

Q. Now then, in a gate valve like in the photograph of this Tonner trap of yours, by turning the handle you would force down into the line a restriction, wouldn't you?

A. You would if that was done.

Q. And that restriction would build up a pressure, would it not, in the trap if there was gas coming through?

A. If you had such a well that would produce a certain amount of gas and a certain amount of oil, that restriction might maintain pressure, but there isn't any of those kind of wells.

Q. Now, did you know when you sold that trap for the Tonner No. 3 Well what line it was going to be put on? A. I did not.

Q. You did not know what was going to be done with it at all?

A. I knew that they were going to use it to separate gas and oil.

Q. And you did not know anything yourself about what they were going to do with it, where they were going to put it up?

A. Oh, I knew right where they were going to put it, yes, install it.

(Testimony of David G. Lorraine.)

Q. Did you know where they were going to make connections? A. No, sir; I did not.

Q. Didn't you tell them what they could connect it to? [254] A. No, we did not.

Q. Who did you talk to about it?

A. Mr. Burroughs, the superintendent.

Q. What is the conversation that you had with him? How did you get him to put the trap in?

A. Why, the trap that they were using at the time went out of operation two or three times in about five days; became totally inoperative.

Q. And what line was that trap on?

A. That was on the same line, I guess.

Q. The same line that is shown in this photograph? A. The same gas line; yes, sir.

Q. And that other trap that you referred to is shown in this photograph that you have produced, is it? A. Yes, sir.

Q. Then, all right. Go ahead and tell us what conversation you had concerning installing this trap.

A. Well, we installed the trap,—I told them I would ship the trap out there and let them put it up on trial; the trap was not sold. That was put in there on trial.

Q. Now, then, you understood all the conditions concerning this before you went out and sold the property, didn't you, or installed the trap, or to get them to take the trap?

A. To get them to try it?

Q. Yes. A. Yes, sir.

(Testimony of David G. Lorraine.)

Q. Now, did you know what pressure the Trumble trap was working under?

A. The Trumble trap was not working at that time.

Q. Well, when it was working.

A. No, I don't.

Q. You did not? A. No.

Q. Did you know what was being done with the gas? [255]

A. Yes, I knew it was going into the absorption plant.

Q. Now, do you understand anything about absorption plants at all?

A. Why, yes; I am very familiar with them.

Q. It requires the gas,—the gas has to come in under pressure to this absorption plant, doesn't it?

A. Yes, sir.

Q. And you knew that that trap of yours was going to be put up and the gas run.

A. Well, I wasn't positive what they was going to do with the trap. They was going to see whether the trap would work satisfactorily.

Q. You knew they were going to put it on that line, didn't you?

A. If it worked satisfactorily I thought they would, yes.

Q. That was the purpose you sent it there for, then. A. Yes, sir.

Q. Why do you put pressure gages on your traps?

(Testimony of David G. Lorraine.)

A. Why, to see whether there is any pressure built up on the trap.

Q. Why do you test them up to 250 pounds' pressure before you send them out?

A. Why, to be sure there are no leaks in them and you can't tell what any well is liable to do. Nobody knows how much of a volume of gas is liable to come out of one oil well.

Q. Now, haven't you represented that one of the advantages of your trap is that it can be run under a pressure up to as high as 250 pounds?

A. No, never have.

Q. You are willing to state that you never have represented that an advantage of your trap was that it could be run under pressure?

A. No, I would not say that, but I never set 250 pounds. [256]

Q. Well, what do you say?

A. I said it would operate at high or low pressure.

Q. (By the COURT.) Inside of the trap?

A. Yes, sir.

Q. (By Mr. L. S. LYON.) When did you first start in the business of making traps?

A. Here since this suit or before the suit?

Q. Well, before the suit, whenever you started.

A. Well, I have not had any on the market, that is, to do any gas trap business, but the first gas trap I made was sometime in about 1905, I should say, in about July, after I seen that there Teco trap that I just described, in Texas.

(Testimony of David G. Lorraine.)

Q. Now, when was it you started in here making traps?

A. About four years ago; three years ago.

Q. Just prior to that what business were you in?

A. Oil field work.

Q. What oil field work?

A. Why, I was at pump stations and engineering work and work like that.

Q. What did you do?

A. Run pump stations; worked in the oil fields; all kinds of work, general work.

Q. Were you employed by a company as a laborer of some kind?

A. Yes, sir—no, not a laborer; you could hardly call it a laborer. I worked at the pump stations and worked generally in oil fields.

Q. As a mechanic?

A. Well, as a mechanic, pumper and engineer.

Q. Then, about four years ago you became interested in starting to make a trap? A. Again, yes.

Q. Had you ever sold a trap before that?

A. Yes, sir. [257]

Q. How many?

A. Oh, I sold about four, I think; I guess I gave one away.

Q. How long before that?

A. Before I started out here?

Q. Yes.

A. 17 years now; about 17 years.

Q. Between that time you worked as a mechanic, did you? A. Yes, sir.

(Testimony of David G. Lorraine.)

Q. Now then, just before you started up in this locality about four years ago you had seen and observed the operation of the Trumble trap, hadn't you? A. I never saw the interior of it.

Q. And observed the operation of one, haven't you? A. Yes, sir.

Q. Now, the first traps that you made here, how were they constructed?

A. Well, one of the first traps that I made here was made something similar to this patent office drawing; that is, regarding this baffle feature.

Q. Did it have the baffle in it?

A. As is shown here; yes.

Q. As is shown on the patent?

A. Yes, had one float in it.

Q. Was that the Tonner? A. No, sir.

Q. What did you do with that trap?

A. Sold it to the K. T. & O.

Q. Did you make any traps with that baffle-plate in before you made the Tonner one?

A. No, sir; not that style.

Q. What other styles did you have?

The WITNESS.—Would you show me those drawings, please?

Mr. BAGG.—Are these the ones you want? [258]

The WITNESS.—Yes, sir. (Receiving same.) Do you want to look at these things?

The COURT.—Have those been offered?

Mr. BAGG.—If your Honor please, I do not see the purpose of this examination. In the first place it is not cross-examination of anything he said.

(Testimony of David G. Lorraine.)

Mr. L. S. LYON.—We offer the drawings produced by the witness in evidence.

The COURT.—What is the purpose?

Mr. L. S. LYON.—If we can just wait for a few minutes I will bring out the purpose, your Honor. I would rather not state it in front of the witness.

The COURT.—Very well.

Mr. BAGG.—Well, we object to the introduction of these until they have been—

Q. (By Mr. L. S. LYON.) What do those drawings show that you have produced, Mr. Lorraine?

A. Why they show gas traps I built before I started to build these traps, before I saw the Trumble trap.

Q. When were those made?

A. Why those were made while I was with the Canal Zone Oil Company.

Q. When? A. 1916.

Mr. L. S. LYON.—These are offered in evidence as Plaintiff's Exhibit—

The CLERK.—19.

Mr. BAGG.—We object to the introduction—

Q. (L. S. LYON.) Do any of these—

Mr. BAGG.—Wait just a moment. I would like to get in an objection.

Mr. L. S. LYON.—Pardon me.

Mr. BAGG.—I object to the offer on the ground they are incompetent, [259] irrelevant and immaterial; haven't any connection with this case, having been made,—testified by the witness hav-

(Testimony of David G. Lorraine.)

ing been made prior to his having seen the Trumble trap and should not be in evidence in this case as an infringing device.

The COURT.—Your purpose is to develop his trap from what he did.

Mr. L. S. LYON.—Yes, your Honor.

The COURT.—Is that prior to the Trumble trap?

Mr. L. S. LYON.—No, this is all admittedly after the Trumble patent came on, after the Trumble invention.

Mr. BAGG.—I think it was before he had ever seen the Trumble trap, wasn't it?

The WITNESS.—Yes, sir.

Q. (By Mr. L. S. LYON.) Where were you working when you made this? A. Made the—

Q. Yes, this drawing and this device that is in this last drawing.

A. Well, when I made the drawing first,—not that drawing, but the original drawing, was in San Francisco, in 1911.

Q. Well, but this trap here, this drawing here, where were you when you made this one?

A. I was in Taft.

Q. In Taft? A. Yes, sir.

Q. Who were you working for?

A. I wasn't working for anybody at that time.

Q. What were you doing?

The COURT.—This was in 1911, you said?

A. No, sir, when that drawing—the original drawing was made in 1911 and then I went to the Canal Zone Oil Company and I made a model of it

(Testimony of David G. Lorraine.)

and then later I had this Patent Office drawing made. I left the drawing there. This was just a photostatic [260] print of what was made in Washington.

Q. (By Mr. L. S. LYON.) When did you make the first trap like this last drawing?

A. About 1916, the model.

Q. Where were you

A. Canal Zone Oil Company near Santa Maria; Grazioza lease.

Q. At Santa Maria?

A. Yes, sir, Grazioza lease.

Q. What did you do at Taft? You started to say something about being at Taft when you did something. What was it you did there?

A. When I made this—fixed this sketch up and sent it to Washington?

Q. Yes.

A. I wasn't doing anything there at the time.

Q. You were at Taft, were you?

A. Yes, sir. I wasn't working for anyone.

Q. Now, then, how many traps like this did you make? A. I just made that one model.

Q. Then the next trap that you made was the Tonner trap? A. No, sir.

Q. What was the next trap you made?

A. The next trap I made was the K. T. & O. trap.

Q. And that K. T. & O. trap was just the same as your patent drawings, as far as you can tell, the patent drawing?

A. That is a good description, yes.

(Testimony of David G. Lorraine.)

Q. Now, there were Trumble traps at the Union property, right near that K. T. & O. installation, weren't there?

A. Yes, I believe there was.

Q. Now, didn't you testify yesterday that the only trap you had ever made that had a baffle in like the Tonner trap was the Tonner trap and you put it up and found it wasn't any good and took it out.
[261]

A. Yes, sir, that is the only one I have made like that Tonner baffle.

Q. Well, Mr. Lorraine, but you made one before and put it up at the K. T. & O. just like the patent drawing there.

A. The one in the Tonner is not like the Patent Office drawing. That has a sheet down here below. This will force the oil down here where the Tonner would be compelled to gravitate.

Q. What would be the progress of the oil in this K. T. & O. trap?

A. Just as you see it here in this here drawing, to allow the gas to escape up here out of this opening and the oil to discharge here in the lower portion of that sleeve; that is a sleeve inside of another sleeve.

Mr. BAGG.—If your Honor please, it seems to me like *this all* incompetent, irrelevant and immaterial, and it seems to me like counsel on the other side should begin to develop their purpose by this time.

(Testimony of David G. Lorraine.)

Mr. F. S. LYON.—With the answer, Mr. Bagg, he is making traps in accordance with this patent and we are now asking him about a trap that he admits is made in accordance with the patent and how it works.

The COURT.—Well, that has no reference, then, to these other drawings.

Mr. F. S. LYON.—No, those early drawings, no. This is what he calls his K. T. & O. trap.

The COURT.—Well, I understand. We had better settle this matter about these other drawings.

Mr. F. S. LYON.—We will withdraw the earlier drawings, then, your Honor.

The COURT.—Very well.

Mr. L. S. LYON.—That is those that were marked Plaintiff's Exhibits.

The COURT.—19-1 and 19-2. They were just offered and admitted. [262]

Q. (By Mr. L. S. LYON.) Now, this K. T. & O. trap, where did the oil come in?

A. Here is the oil inlet here at 3 (indicating).

Q. And where did it pass?

A. Passed down here (indicating).

Q. Passed down sleeve 14, did it?

A. 13—14, yes, you are correct.

Q. Then it struck this baffle-plate 17.

A. Yes, sir.

Q. And it was showered over onto wall 2.

A. Yes, sir.

Q. And passed onto wall 2 down to liquid, did it?

A. Yes, sir.

(Testimony of David G. Lorraine.)

Q. (By the COURT.) That is this patent here, isn't it? That is this device here.

A. No, there is a little difference; there is a larger sleeve here. For instance, this here pipe is 3 inches and the sleeve is 6 inches and then we have this large deflected plate.

Q. I see the pipe is at the bottom.

A. There is a deflector up at the end of the pipe.

Q. (By Mr. L. S. LYON.) Where did the gas separate from the oil? At what point during the progress of the oil in this trap, this K. T. & O. trap?

A. The gas goes up through this here slot and the gas comes off the oil here, holds the oil until the gas was cut off with this partition.

Q. I mean at what points?

A. Some gas came off here, you see.

Q. In the sleeve? A. Yes, sir.

Q. Some came off while it was going down the wall?

A. Well, it did not have much of a chance because the oil was always built up higher in this than it was on that side. This [263] acts the same as a dam in a river.

Q. You say that the oil stayed up on here?

A. Yes, sir.

Q. Up over the baffle-plate?

A. At times, yes; sometimes right—

Q. How often, about a third of the time the trap was working?

A. I watched for it 30 days and the oil was always up at least around here on this side (indicating).

(Testimony of David G. Lorraine.)

Q. If the oil was up above the baffle-plate the oil would not shower on the wall, would it?

A. Well, it would; it was on the wall—with the oil right there that wouldn't stop it (indicating).

Q. If it was up on here it surely would not shower onto the wall below the baffle-plate, would it?

A. I should say it would, yes.

Q. And run down the wall?

A. Why, it would have to run down through here or go over the top. It would have to; if this is its course, it would have to go down the wall in a big volume.

Q. Some of the time in the operation of this trap was the oil level down below?

A. When we would leave the trap out it would go to the bottom.

Q. Wouldn't this automatic valve keep this level, at a constant level?

A. That is not an automatic valve. That is just the oil outlet; the automatic valve would keep it level.

Q. (By the COURT.) Where is the oil outlet?

A. Right here at 31 (indicating).

Q. (By Mr. L. S. LYON.) Wouldn't that seek a level course across there?

A. Now, while the oil was flowing through there. If you stopped the oil from going in there this would come to a level, [264] but this partition is just the same as a dam in the river, to keep one side higher than the other. This oil is always higher

(Testimony of David G. Lorraine.)

on this partition on this side than it is on that side (indicating).

Q. If the oil is right up here at the top of this thing here, don't you just let it run right into that (indicating)?

A. Well, you would never get this to settle.

Q. Why not?

A. Because it would stir it up and shoot it around there; you want to stop that turbulent action.

Q. If it came there in a clump do you think it would stir it up any more than if it just passed along over the bottom there, if the oil was up there (indicating). A. I think so.

Q. How much more?

A. That is the object in deflecting the oil, to stop the turbulent action in there, to keep it—

Q. Now, you observed this running for 30 days, you say. A. Yes, sir.

Q. Where at?

A. Well, it was at 16D, I think, and I would not say the number of the well, but I think it was 82, what they call the Pacific Oil Company now.

Q. Where?

A. It was about three miles from Taft; I would not say—

Q. How could you tell that this oil was up above this baffle-plate?

A. Well, I was very anxious to find out just how that trap was working, because it was a new model, and one day I cut the oil off and there was froth and

(Testimony of David G. Lorraine.)

foam here, and then I had gage cocks to tell just where the oil was.

Q. Where were those gage cocks on the device?

A. In the tank. [265]

Q. Well, whereabouts; point them out on the device. How many of them were there, and where were they? A. There was two of them.

Q. Where were they?

A. I cannot show them on this section. I can show it on the Patent Office drawing which is something similar and show you about where they were. I would not want to say the distance, but they were up above the center portion of the trap. They were up above this oil wall.

Q. Well, in your patent drawing, when you came to draw your patent up, you showed the level of the oil as straight across, didn't you?

A. Yes, but—

Q. You have described the operation of it as being straight across, haven't you?

A. That was before this trap was put in action here, and before I tested it out on the one well.

Q. The patent was applied for before this K. T. & O. trap was sent out, do you say?

A. The patent? No, it was not applied for, but the patent attorney had the specific papers.

Q. When did you sign it, before or after the K. T. & O.? A. I believe it was after.

Q. Yet, you left the oil level straight across there.

A. Yes, sir.

(Testimony of David G. Lorraine.)

Q. And described the showering of the oil and running down this wall? A. Yes, sir.

Q. Now, how big was this baffle? How much area was there on this baffle of that K. T. & O. trap?

A. The area of the plate here?

Q. Yes, how big was it? What were the dimensions of it?

A. We have an area there of about 18 inches.

Q. That was as big as it was altogether? [266]

A. Not an inch over or under; it is a 6-inch baffle.

Q. Now then, when you came to making this Tonner trap, why did you change the dimensions of that spreader or baffle?

A. To stop the stirring action. I thought by putting this type of baffle in it it would prevent the stirring action.

Q. Why?

A. Why, I thought I would have space enough here for any well, but I haven't got it.

Q. You haven't got enough space?

A. Not for it to gravitate down, no.

Q. Does it hit over on the edge, the wall of the chamber?

A. Why, out here, when you put this on the Tonner well, this filled right up with oil, as I said yesterday, and it ran over the top.

Q. How often did it do that? How long did this trap operate on the Tonner lease, this trap here?

A. It is still in operation.